



Volts You Can Trust

www.voltrust.com



Bluetooth APP

VolTrust LTD

 732 S 6TH ST #5047 LAS VEGAS, NV, 89101

 support@voltrust.com

Battery Manual

For Golf Cart

51.2V 105Ah

VG51105



1.Safety Precautions	01
2.Specifications	02
3.Product Overview	04
4.Symbol Explanation	06
5.Curve Status	07
6.Before Installation	10
7.During Operation	11
8.Accessory Description	12
9.Accessory Assembly	14
10.MPPT Instructions	16
11.Battery Wiring	20
12.Display Wiring	24
13.Solar Panel Instructions	31
14.Charger Instructions	33
15.Series & Parallel Connection	36
16.Bluetooth APP	38
17.Warranty	52

Safety Precautions

- It is important to read the user manual carefully before installing or operating the battery. Failure to follow the instructions or warnings in this document may result in electrical shock, serious injury, death, or damage to the battery and system.
- Recharge the battery within 12 hours after it has been fully discharged.
- Do not leave cables exposed outside the battery.
- Disconnect all battery terminals before performing maintenance.
- Do not use solvents or chemical cleaners on the battery.
- Do not expose the battery to flammable chemicals, harsh substances, or vapors.
- Do not paint or coat any part of the battery, including internal and external components.
- Do not insert any foreign objects into any part of the battery.
- Warranty claims do not cover direct or indirect damage caused by the conditions listed above.
- If the battery is stored for an extended period, it should be recharged every three months, and the SOC must remain above 30%.

Electrical Performance

Nominal Voltage	51.2 V
Nominal Capacity	105 Ah
Energy	5376 Wh
Resistance	≤50 mΩ @ 50% SOC
Self Discharge	<3% / Month
Cells	Square Cell 3.2 V105 Ah

Mechanical Performance

Dimension (L x W x H)	16.93" x 11.81" x 9.69"
Approx. Weight	≈49.7 kg
Terminal Type	M8
Terminal Torque	/
Case Material	Metal
Enclosure Protection	IP65

Temperature Performance

Discharge Temperature	-20 ~ 60 °C
Charge Temperature	0 ~ 55°C
Storage Temperature	10~30°C
High Temperature Cut-Off	65°C
Reconnect Temperature	55°C

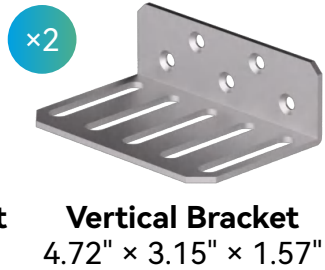
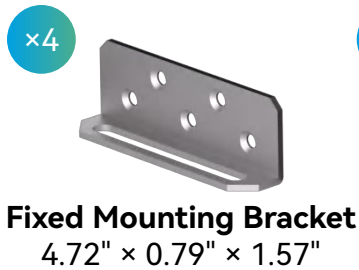
Charge Performance

Recommended Charge Current	50 A
Maximum Charge Current	100 A
Recommended Charge Voltage	58.4 V
Charge Cut-Off Voltage	58.4 V
Reconnect Voltage	≤56 V
Balancing Voltage	≥52.8V
Maximum Batteries in Series	/
Maximum Batteries in Parallel	/

Discharge Performance

Continuous Discharge Current	50 A
Maximum continuous Discharge Current	200 A
Peak Discharge Current	850 A(30S)
Recommended Low Voltage Disconnect	43.2 V
Discharge Cut-Off Voltage	40 V
Reconnect Voltage	44 V
Short Circuit Protection	250 μs

51.2V 105Ah LiFePO₄ Golf Cart Battery



Optional Accessories

Optional accessories must be purchased together with the battery and can be selected individually or as part of a bundled package.



Round Display



20A Charger



Charging Port



Charging Cable



Adjustable Display Mounting Kit



Display Adapter Cable



Display Mounting Kit

Product Identification Definition



Bluetooth APP

This product connects to a mobile app via Bluetooth.



CE Listed.

RoHS

RoHS Listed.

MSDS

This product has passed MSDS testing.

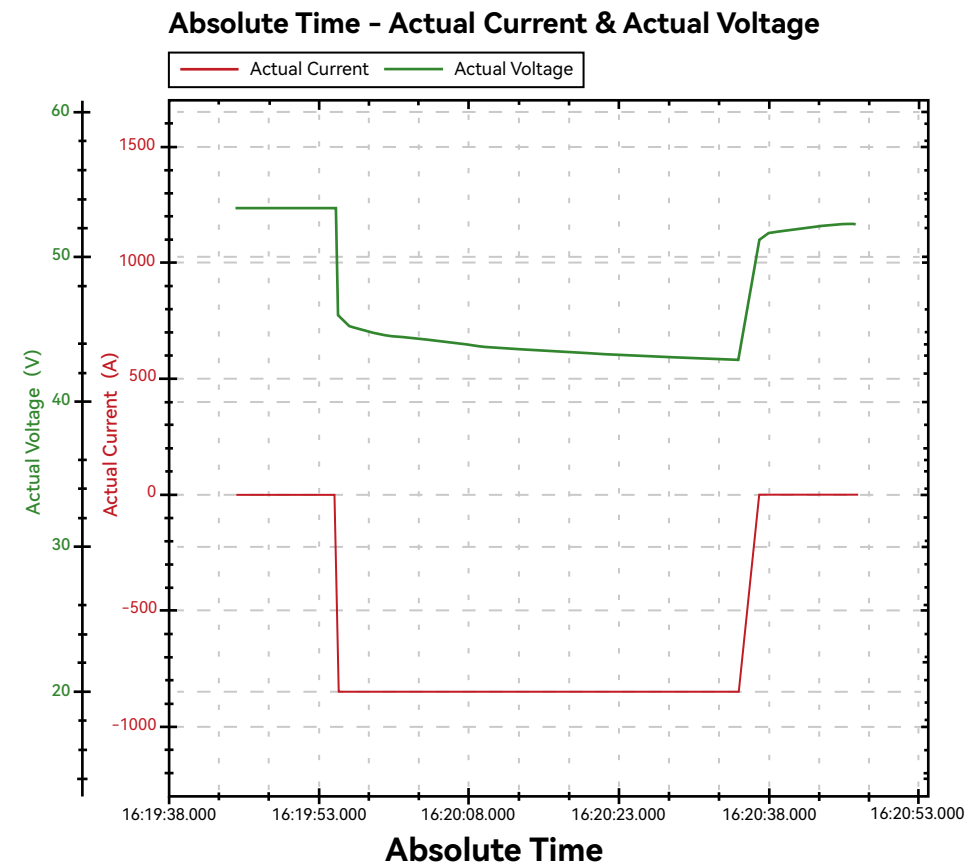
UN38.3

This product has passed UN38.3 testing.

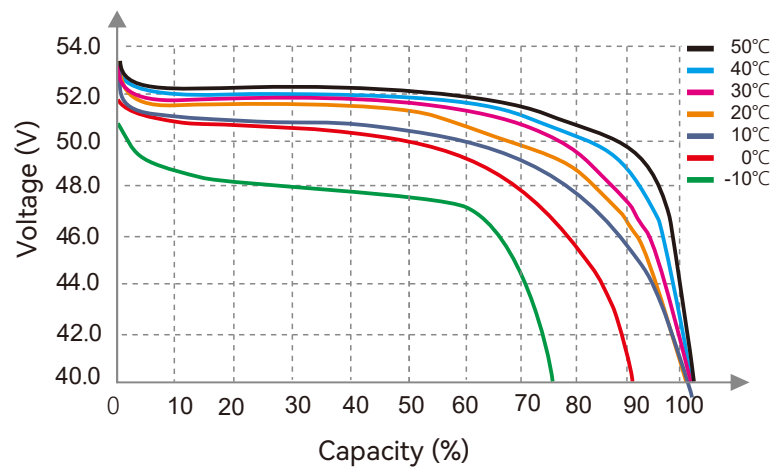
850A Discharge Performance

The graph below illustrates the complete discharge performance under an 850A load, recorded from 16:19:44 to 16:20:47.

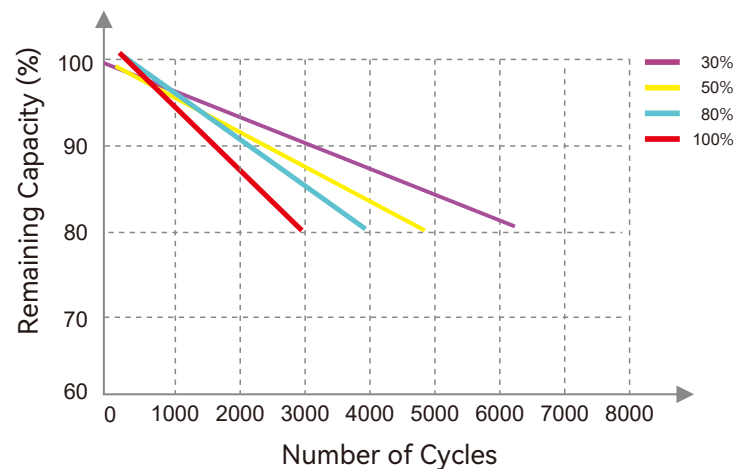
850A Discharge Curve



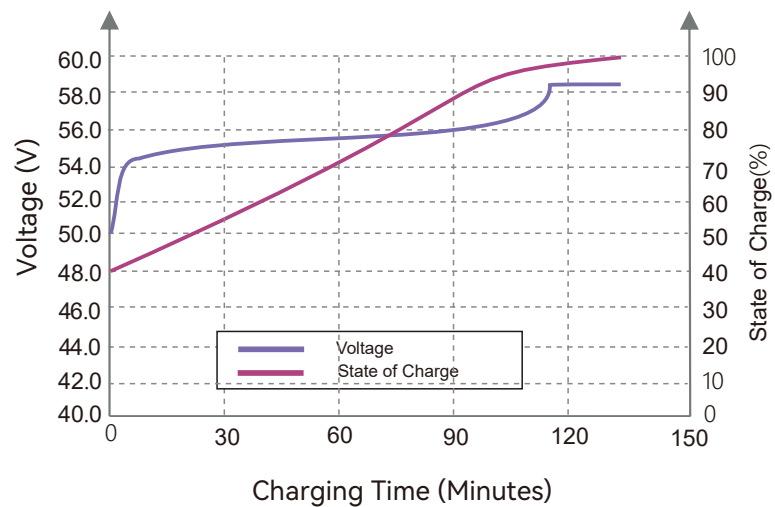
Different Temperature Discharge Curve(0.5C)



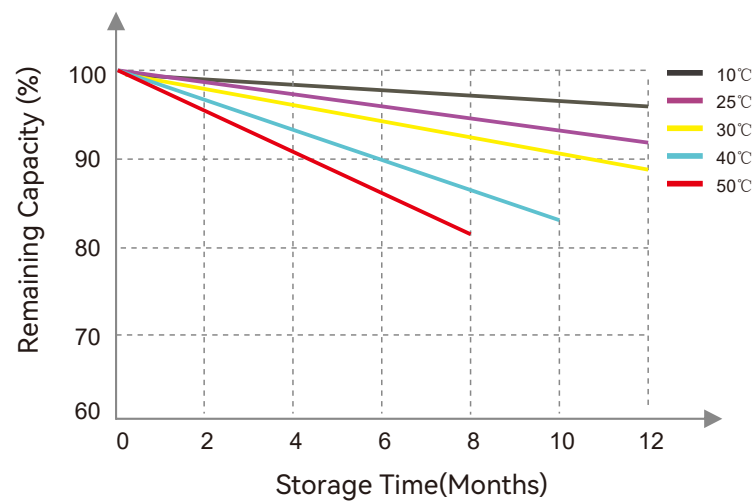
Different DOD Discharge Cycle Life Curve(1C)



State of Charge Curve(0.5C, 25°C)



Different Temperature Self Discharge Curve



Before Installation

Carefully inspect the battery and packing contents after delivery. If any damage or missing parts are found, please contact the supplier promptly.

Make sure the battery is completely powered off before installation.

Verify that all wiring is connected properly. Never reverse the positive and negative terminals, and prevent external short circuits during installation.

Do not connect the battery directly to any AC power source.

The internal BMS is intended for 51.2VDC operation only. Do not connect the batteries in series or parallel.

Do not use this battery together with different battery types.

Confirm that the battery specifications are compatible with the controller and motor before use.

Keep the battery away from fire and water.

During Operation

Before transporting, inspecting, or servicing the battery system, disconnect the power supply and turn off the battery completely.

Do not connect this battery with other types of batteries.

Do not operate the battery with damaged or incompatible controllers or motors.

If a fire occurs, only a dry powder fire extinguisher should be used. Do not use liquid-based fire extinguishers.

Do not attempt to open, modify, repair, or disassemble the battery. We are not liable for any damage or accidents caused by improper operation or failure to comply with safety instructions and equipment safety requirements.

Accessory Identification



#1

Fixed Mounting Bracket

(Designed for basic mounting adjustment.)

Compatible with standard M8 bolts. Designed for basic installation with limited adjustment for standard golf cart mounting positions.

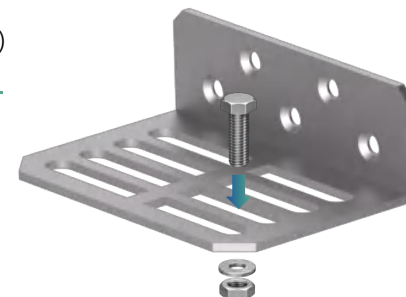


#2

Horizontal Bracket

(Designed for basic mounting adjustment.)

Compatible with standard M8 bolts. The multi-slot design allows wider horizontal adjustment and multiple mounting positions for greater installation flexibility across different golf cart layouts.



#3

Vertical Bracket

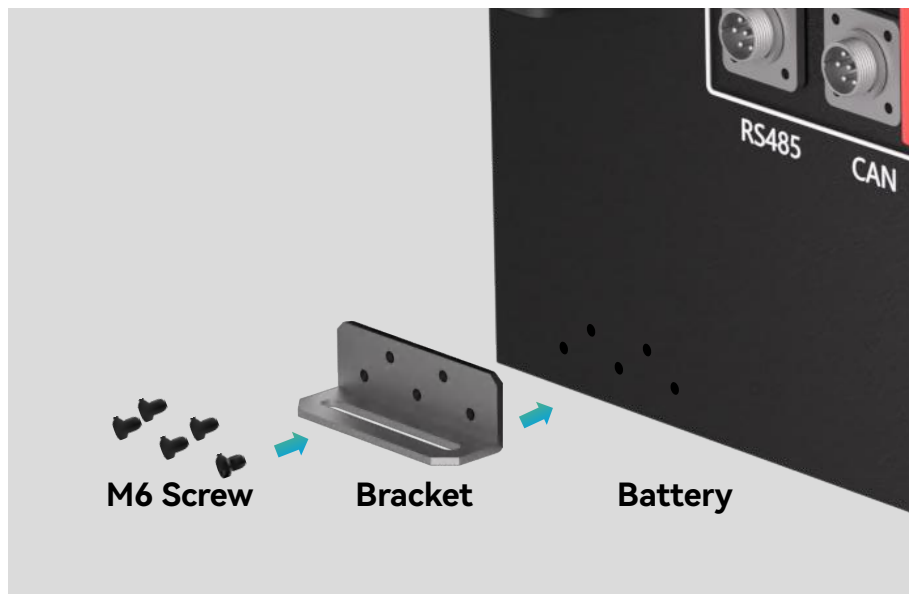
(Designed for basic mounting adjustment.)

Compatible with standard M8 bolts. The extended slot design provides a wider mounting adjustment range, making it easier to accommodate different hole spacing requirements and installation positions.



Bracket Assembly

Assemble the bracket and battery using M6 screws. According to the actual golf cart installation conditions, select Bracket #1, #2, or #3 as needed to securely mount the battery to the golf cart.



#1
Fixed Mounting
Bracket

or



#2
Horizontal
Bracket

or



#3
Vertical
Bracket

Secure the Battery

Securely fasten the battery using professional-grade installation tools for enhanced stability and safety. The reinforced mounting structure and heavy-duty hardware help keep the battery firmly secured, improving vibration resistance and installation stability in demanding driving conditions.



MPPT Solar Charge Controller

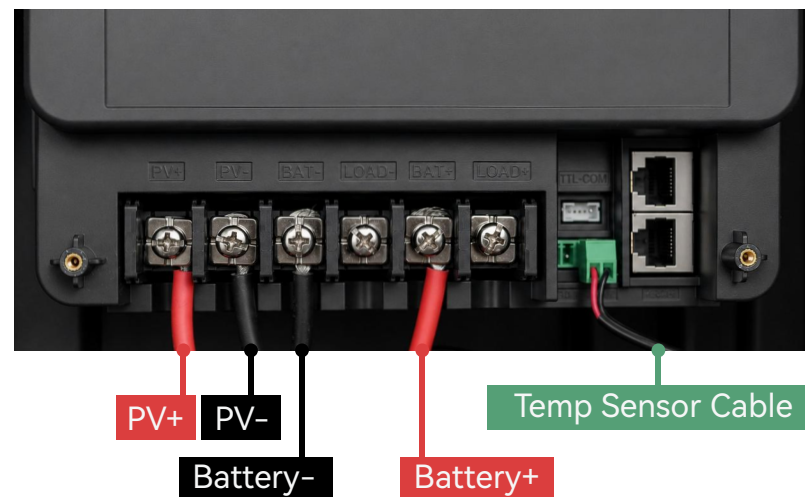
Using the SRNE-MA4830N15 as an example, securely mount the MPPT to the golf cart. Ensure all screws are firmly tightened to prevent loosening or detachment caused by vibration during operation.

Once the MPPT is securely mounted, loosen the screws on the MPPT protective cover.



*The MPPT should be selected based on your actual application requirements. The MPPT shown in this guide is for demonstration purposes only.

MPPT Wiring Method



MPPT Temperature Sensor

The temperature sensor can be attached to any position on the battery to monitor battery temperature in real time. If necessary, thermal conductive gel may be applied to improve fixation and heat transfer performance.



MPPT Temperature Sensor

MPPT Assembly Complete

After completing the MPPT wiring installation, ensure all MPPT wiring connections are securely fastened. Loose wiring may cause charging or discharging issues and may affect normal operation.

Do not connect the solar panel immediately. Follow the recommended connection sequence: connect the battery first, then the display, and finally the solar panel.

After wiring is complete, make sure the protective cover is properly installed and secured. Failure to install the cover may allow water to enter the wiring area, which could potentially result in short circuits, connection issues, or other abnormal operating conditions.



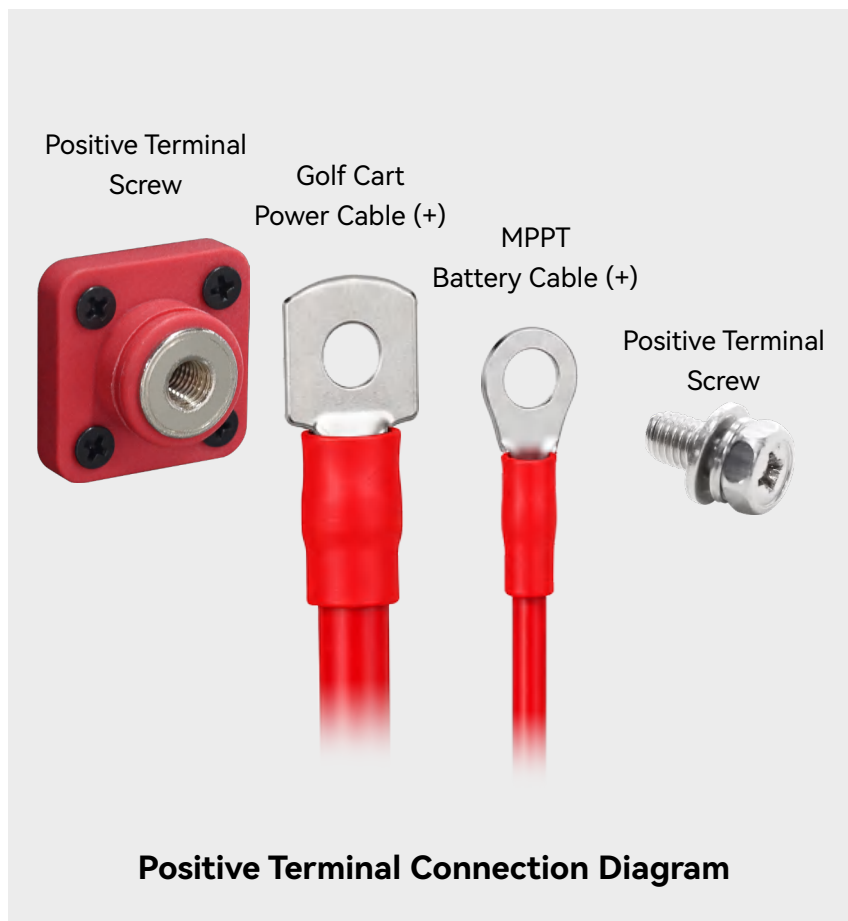
Connect Battery Cables

First, connect the negative battery terminal and ensure the connection is secure and properly tightened before continuing the installation process.



Connect Battery Cables

Next, connect the positive battery terminal securely and make sure the connection is properly tightened before proceeding.



Connect the LCD Display

For RS485 Communication Protocol:

Connect the LCD display cable to the RS485 communication port on the battery and tighten the connector securely.



The battery comes standard with a 7-pin connector.

Connect the LCD Display

For CAN Communication Protocol:

Connect the LCD display cable to the CAN communication port on the battery and tighten the connector securely.



The battery comes standard with a 7-pin connector.

Display Compatibility

The battery comes standard with a 7-pin connector. If it is not compatible with your display, a display adapter cable is required for use.



Display Adapter Cable



7-Pin Plug Connector



6-Pin Connector



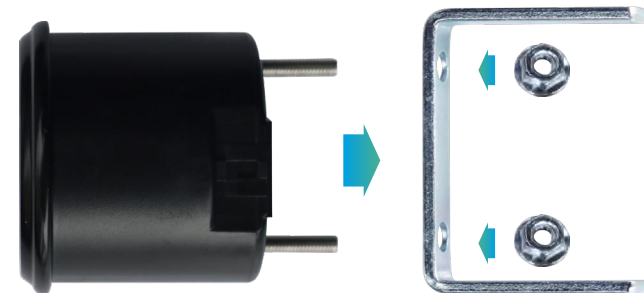
4-Pin Connector

Display Mounting Kit

Note: This mounting bracket is for round displays only.

The standard display mount can be welded to any metal frame on the golf cart for convenient viewing. Its fixed design ensures stable installation, reducing vibration. After welding, simply assemble and secure the display.

Assembly Diagram



Installed Appearance

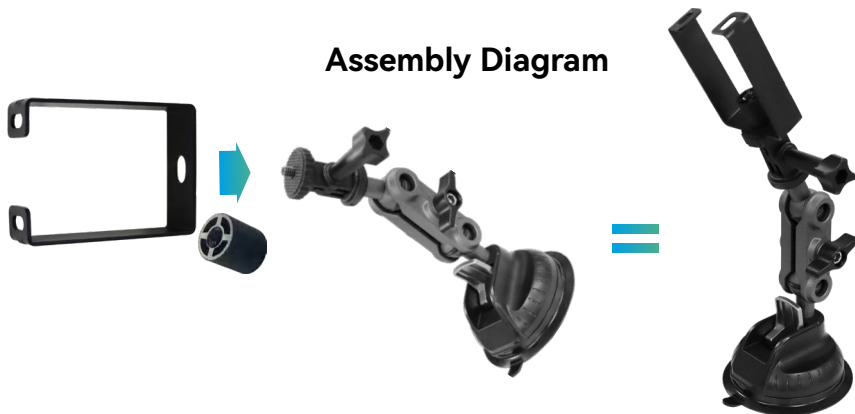


Adjustable Display Mounting Kit

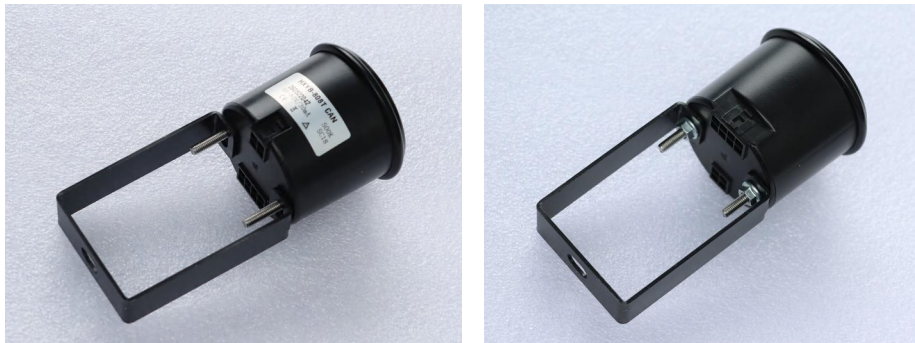
Note: This mounting bracket is for round displays only.

The adjustable display mount attaches to the golf cart windshield with a suction cup, allowing flexible angle and position adjustment for better visibility and easier monitoring.

Assembly Diagram

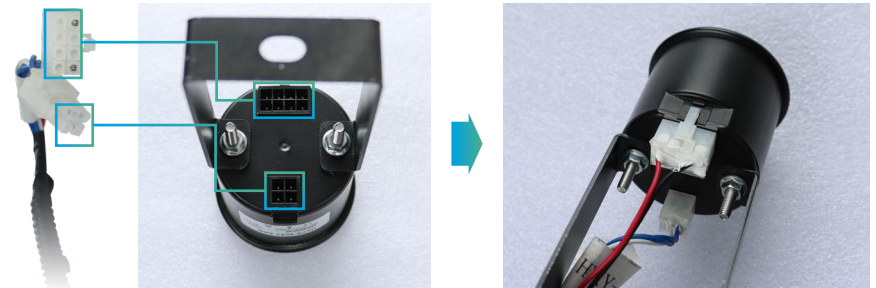


Display Assembly



Adjustable Display Mounting Kit

Connect the display cable to the display and align it with the corresponding mounting holes for proper installation.



Attach the assembled display mount to the golf cart windshield. Adjust the viewing angle as needed to complete the installation.



Round Display

The round display provides real-time monitoring of voltage, battery capacity, and runtime, allowing users to quickly check battery status during operation with minimal interaction.



50.0 v

Voltage Status

100%

Battery Capacity

0.0 A

Current

Assemble the Solar Panel

Using a flexible solar panel as an example, connect the solar panel cables from the MPPT to the corresponding positive (+) and negative (-) terminals of the solar panel. Ensure the polarity is correctly matched before connection. Do not rely solely on cable color to identify polarity.

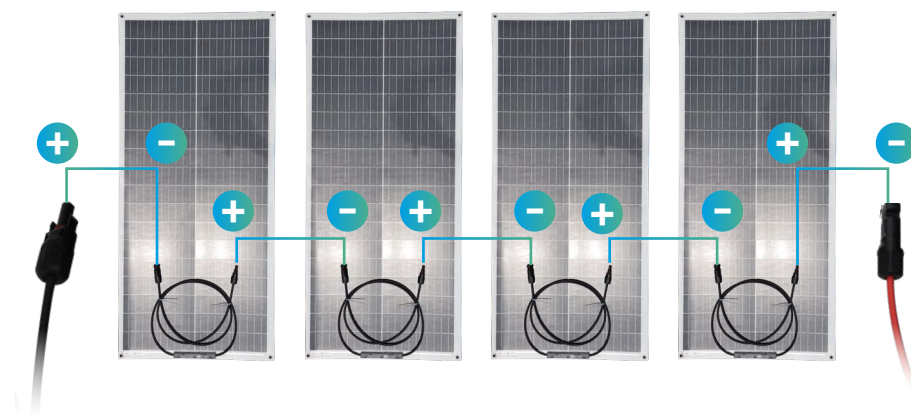
Positive MPPT
Connection Cable



Negative MPPT
Connection Cable



Solar Panel Connection Diagram



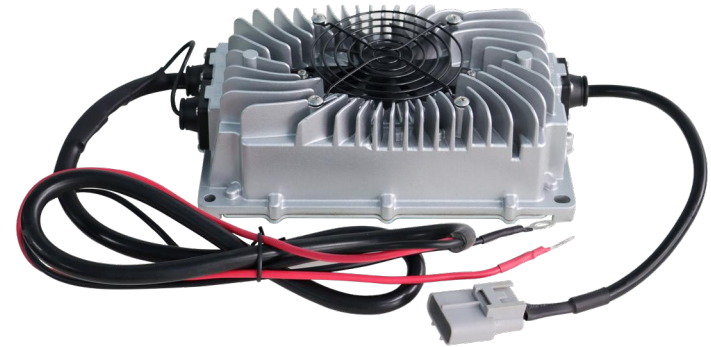
Assembly Complete

After assembling the solar panel and connecting it, follow the MPPT manufacturer's instructions to configure the MPPT settings. Before use, make sure all battery parameters—such as voltage and current—are within normal ranges. If you have any questions, please contact us directly.

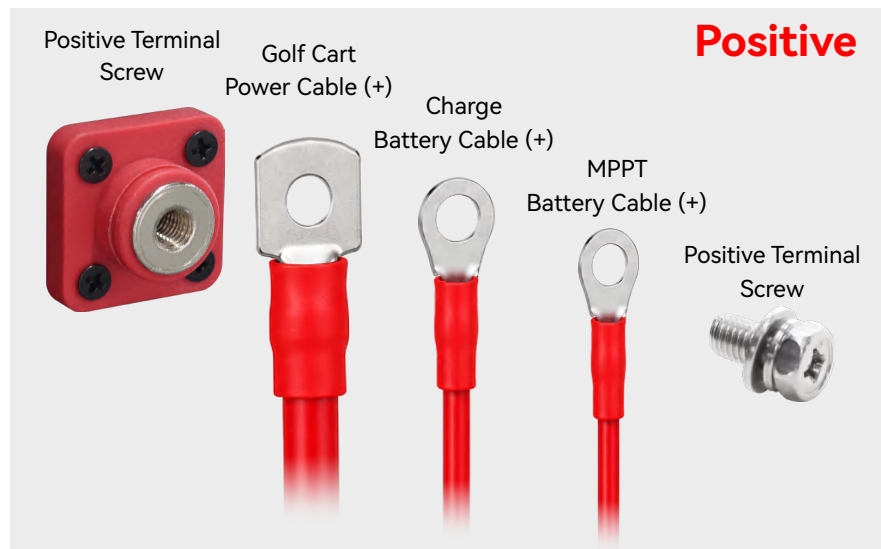


Battery Charging

If you purchase our charger kit, an additional connection wire must be added to the battery's positive and negative terminals when connecting the charger.

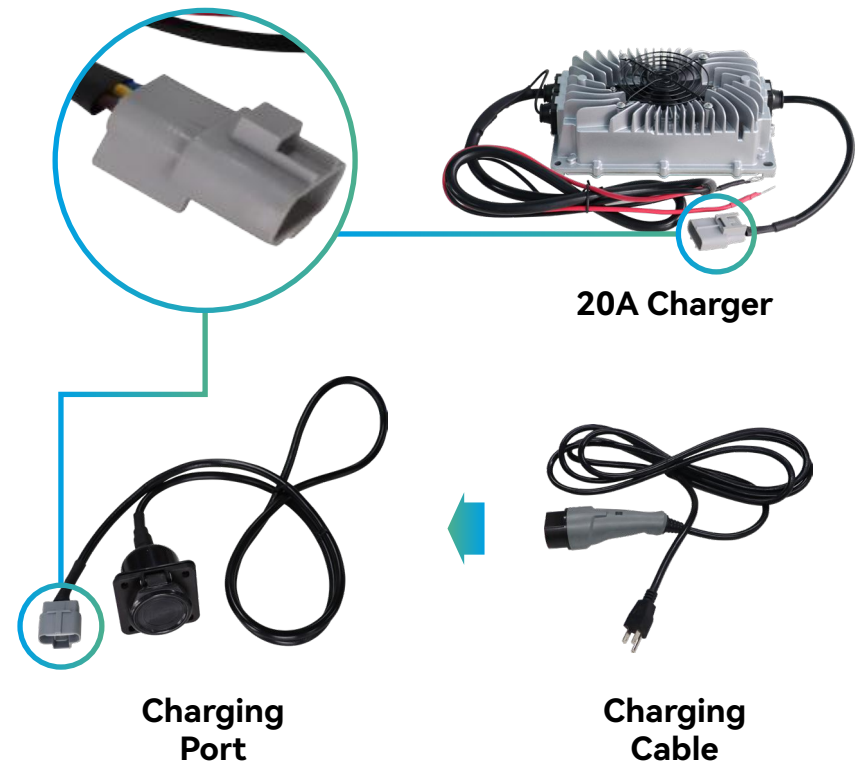


Positive and Negative Terminal Connection Diagram



Battery Charging

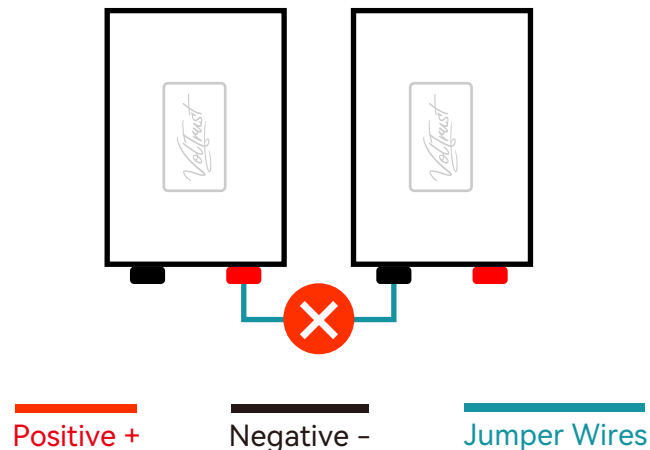
Finally, connect the charger to the charging port. The charging port can be installed at any suitable location on the golf cart for convenient access. Once installed, the charging gun can be used for charging.





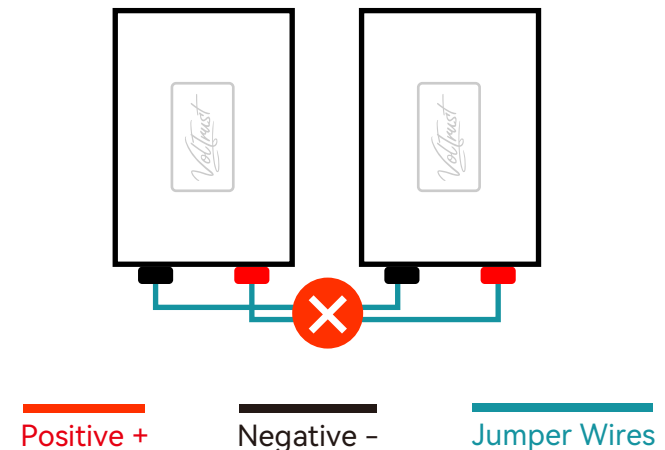
51.2V Batteries Must Not Be Connected in Series

WARNING: 51.2V golf cart batteries must NOT be connected in series. Series connection of multiple 51.2V batteries will create excessive voltage and may result in severe damage to the battery, charger, controller, motor, or other electrical components. Incorrect installation may cause overheating, electrical failure, fire risk, or other safety hazards. Always confirm system voltage compatibility before installation. Do not connect 51.2V golf cart batteries in series under any circumstances.



51.2V Batteries Must Not Be Connected in Parallel

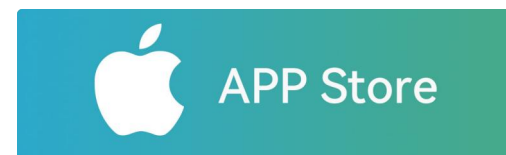
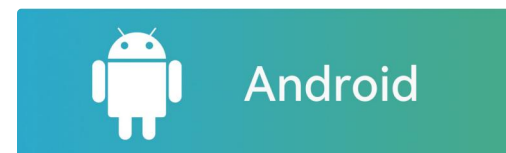
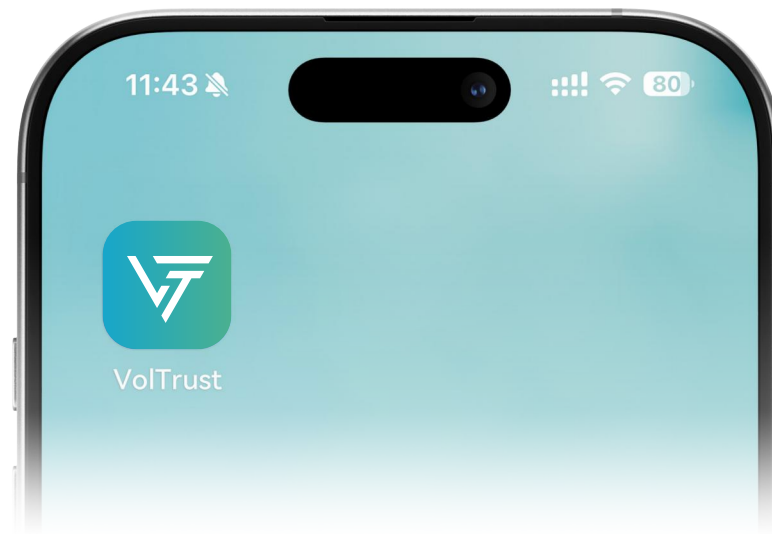
WARNING: 51.2V golf cart batteries must NOT be connected in parallel. Parallel connection of multiple 51.2V batteries may result in abnormal current flow, battery imbalance, communication conflicts, or system malfunction, potentially causing damage to the battery, charger, controller, motor, or other electrical components. Incorrect installation may also lead to overheating, reduced performance, electrical failure, or other safety hazards. Always confirm system compatibility before installation. Do not connect 51.2V golf cart batteries in parallel under any circumstances.





Bluetooth APP

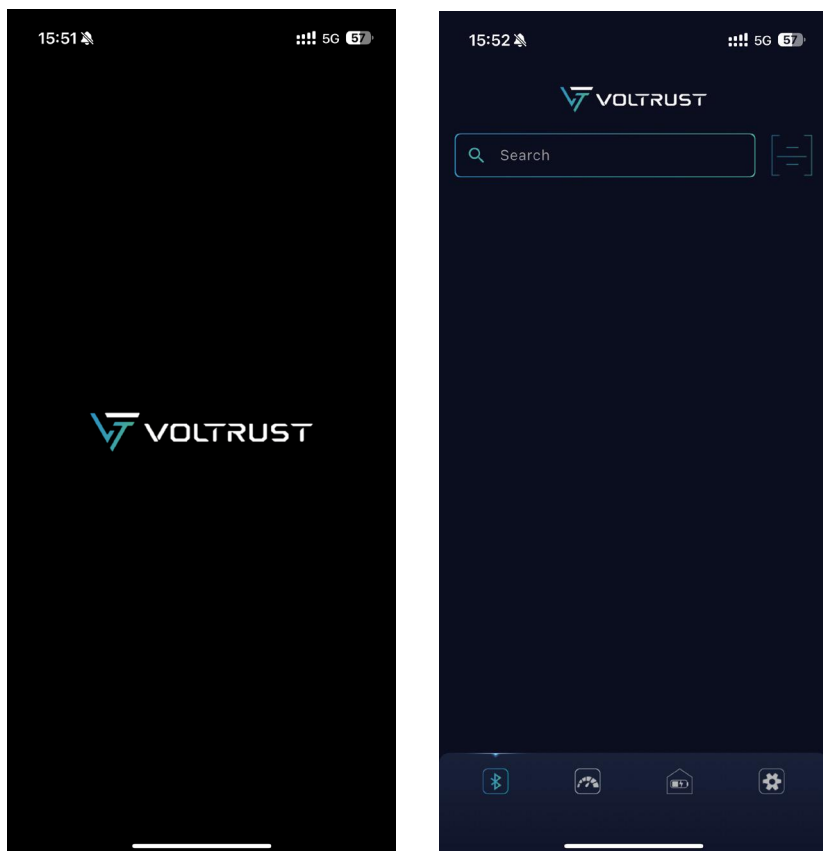
1. Scan the QR code or visit the official website at www.voltrust.com to access the APP download page.
2. Select the appropriate download option for your mobile device (iOS or Android) and complete the installation process.
3. Enable Bluetooth on your mobile device before opening the APP to ensure proper communication with the battery system.
4. Open the APP to view battery information, monitor system status, and manage battery functions.
5. The download page also includes APP operating instructions and guidance to help users understand the main functions and connection process before use.
6. Please make sure your mobile device stays within Bluetooth communication range during operation for a stable connection.



Bluetooth APP Download

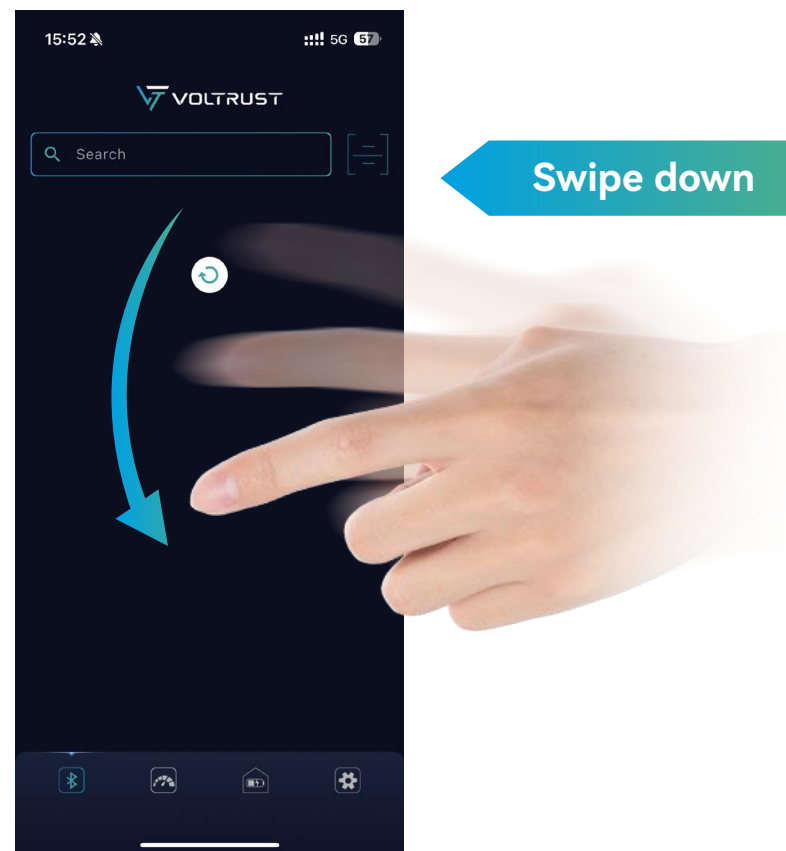
App Launch

Open the app. The VolTrust startup animation will be displayed until it disappears, then the connection page will appear.



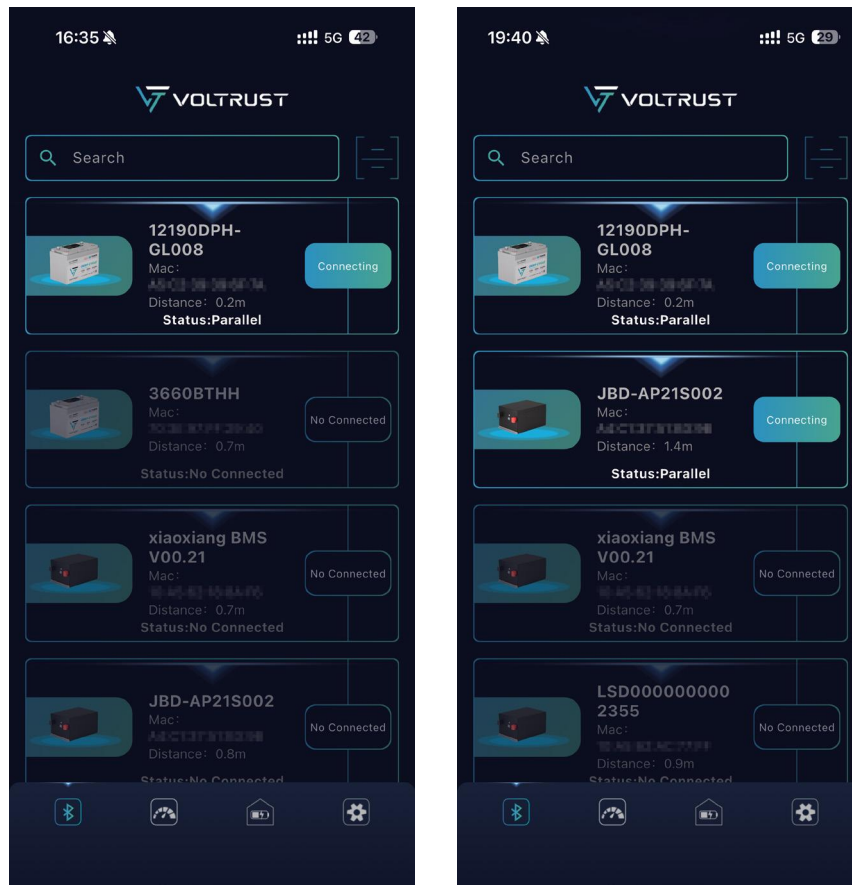
App Connection

Swipe down to refresh and scan for nearby batteries.
Select the corresponding battery from the list to connect.



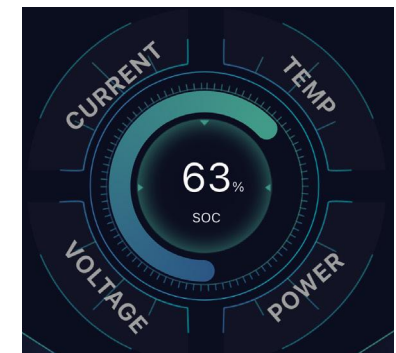
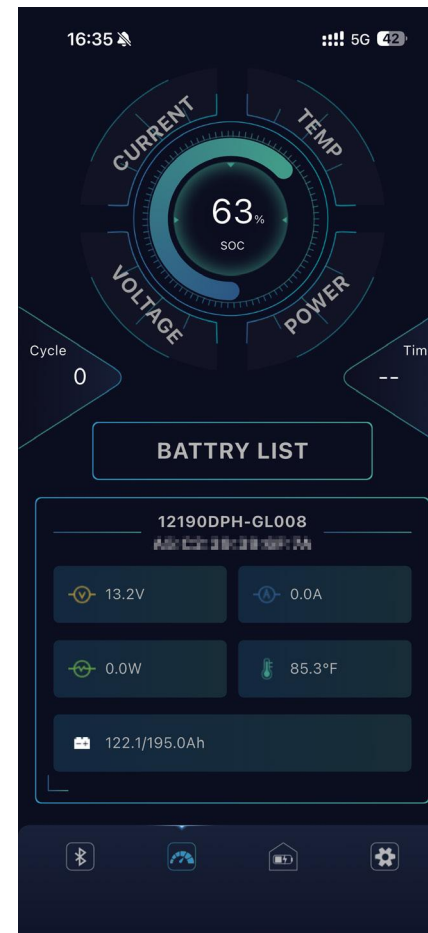
App Connection

After refreshing, all nearby battery packs available for monitoring and connection will be displayed. Based on your needs, you can select and connect to a single battery pack or multiple battery packs simultaneously.

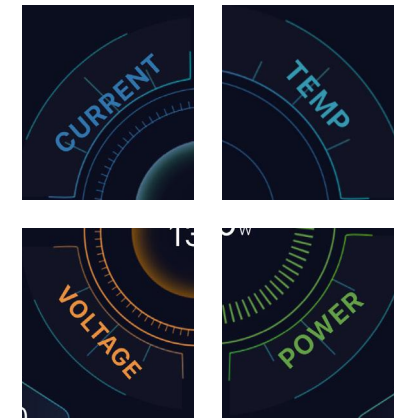


Battery Status

View important battery information, including SOC, current, temperature, voltage, power, cycle life, operating time, and other real-time battery status data.



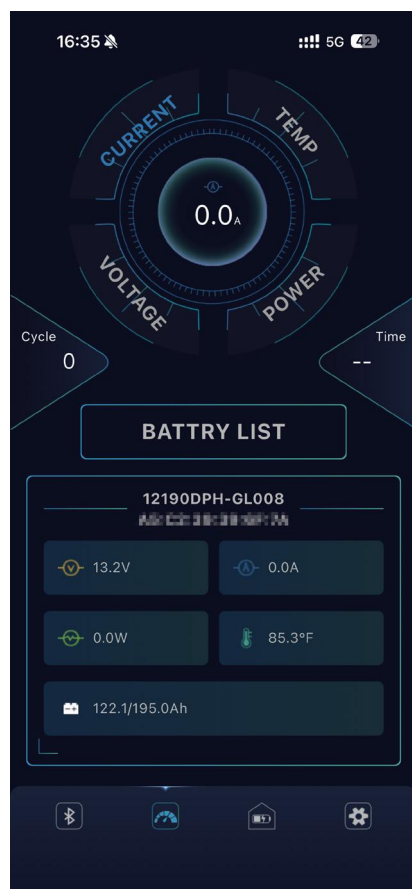
Tap the button once. When the color indicator is displayed, you can view the corresponding battery status.



Battery Status

APP Status Interface Display.

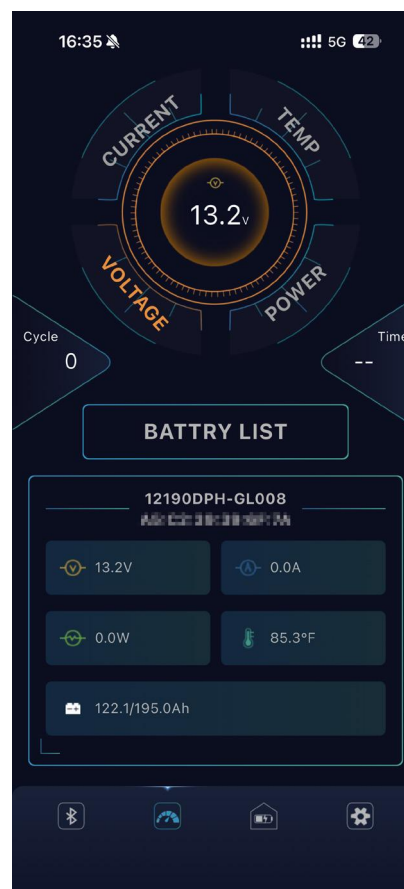
Current



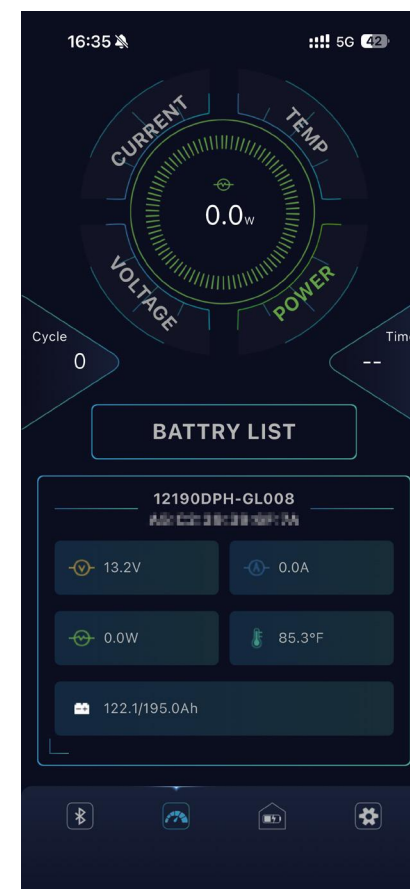
Temperature



Voltage

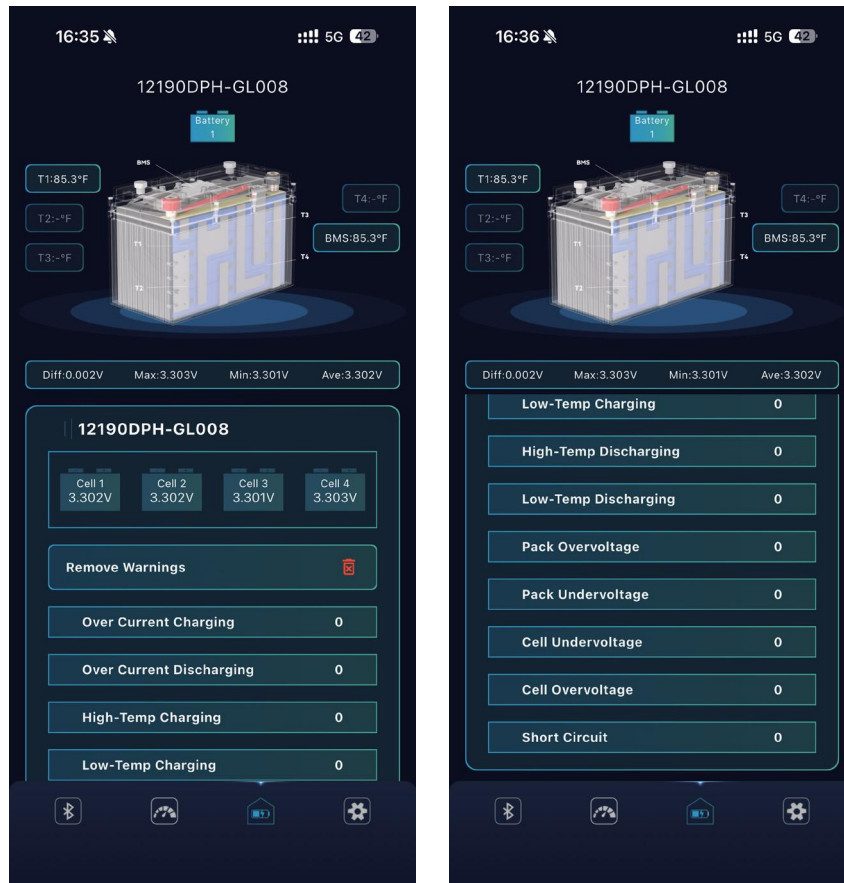


Power



Cell Status

View individual cell voltage, detailed battery temperature status, and battery fault history.



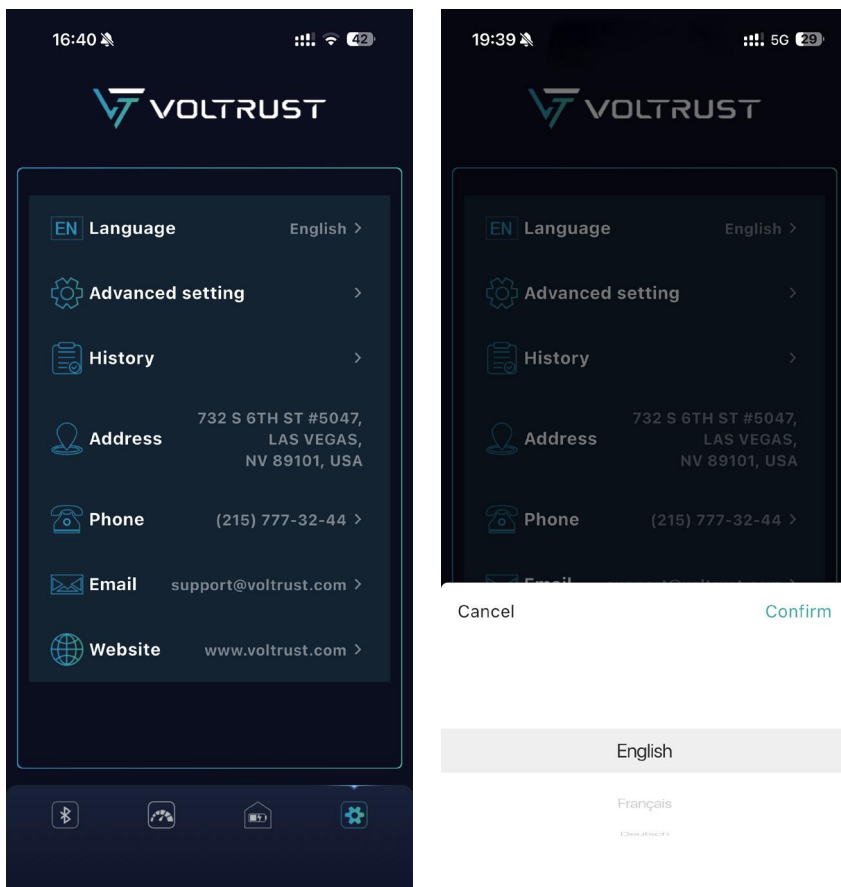
Cell Status

When two different battery packs are connected simultaneously, tap Battery 1 or Battery 2 to switch between battery views.



Settings

Tap Language Settings to switch the language.



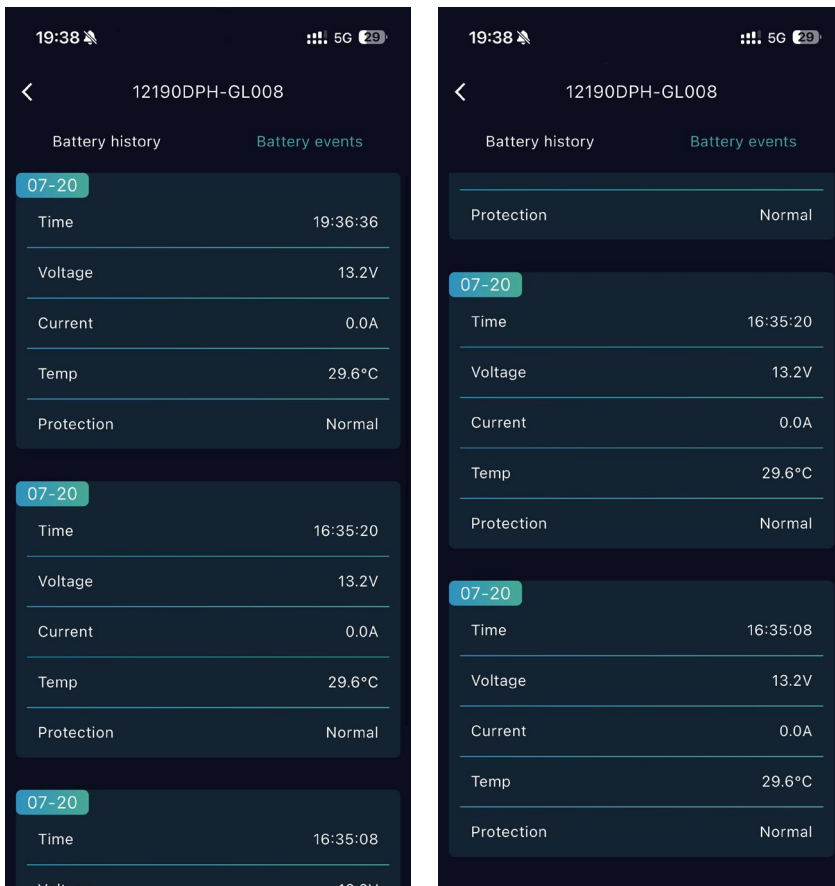
Settings

Tap History to view the battery's previous usage records.



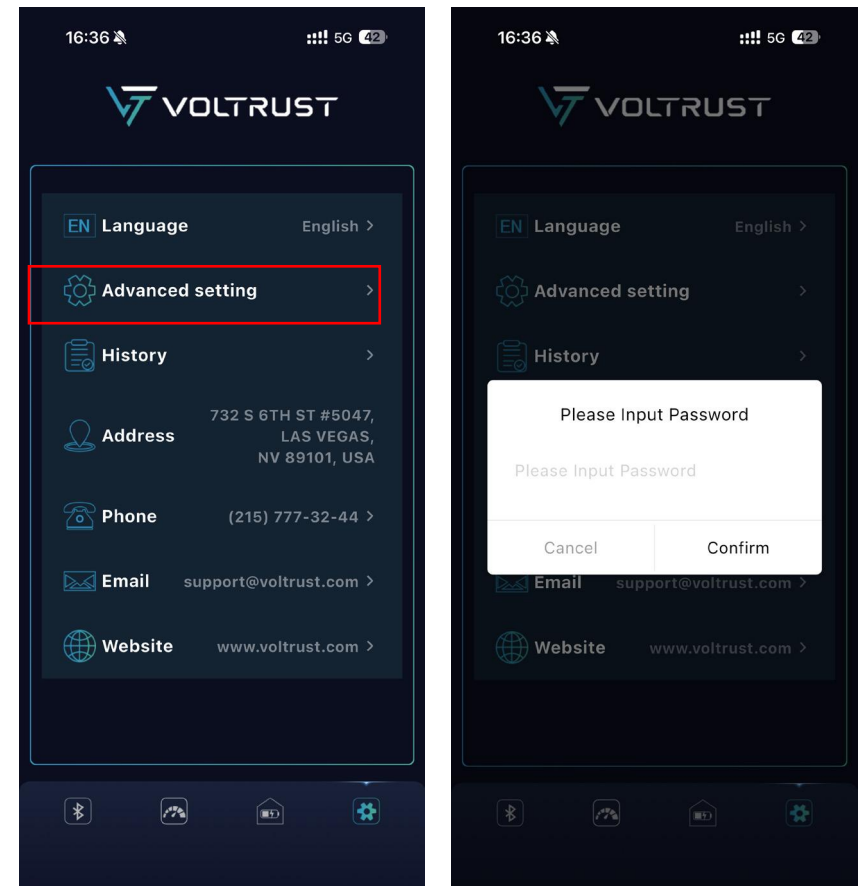
Settings

Tap Battery Events to view battery operating history for a selected time range.



Notes

Advanced Settings and other password-required sections are reserved for VolTrust-authorized technicians. Users should not access or modify these settings unless instructed by VolTrust technical support.



Warranty Coverage

VolTrust warrants that eligible products are free from defects in materials and workmanship under normal use and service during the applicable warranty period.

Warranty Period

The warranty period begins on the date of delivery or the date of the original proof of purchase, whichever can be reasonably verified.

Current warranty terms by product category:

Lithium Batteries: 5-year limited warranty

Note: Final warranty periods are subject to the product page or official order confirmation.

What Is Covered

This warranty covers verified manufacturing defects, including but not limited to:

- Failure under normal intended use
- Verified battery management system (BMS) faults
- Verified cell or assembly defects

What Is Not Covered

This warranty does not cover issues caused by:

- Improper installation, misuse, abuse, or negligence
- Unauthorized modification, repair, or disassembly
- Improper charging, incorrect system integration, or incompatible equipment
- Cosmetic damage that does not affect performance
- Damage caused by water ingress, fire, collision, or external force
- Normal wear and tear or performance decline within reasonable use conditions
- Commercial, rental, racing, or other abnormal applications unless explicitly approved

Warranty Claim Process

To start a warranty claim, please contact our support team and provide:

- Order number
- Product model
- Problem description
- Photos or videos of the issue
- System information, installation details, and troubleshooting records if requested

Warranty Remedies

If a valid warranty claim is confirmed, VolTrust may, at its sole discretion:

- Provide troubleshooting support
- Repair the product
- Replace the product with the same or equivalent model
- Offer a partial or full refund where applicable

Shipping Responsibility for Warranty Claims

For verified quality-related warranty cases, VolTrust will [cover / partially cover / assess case by case] the return or replacement shipping cost.

For non-quality issues, shipping and related handling costs may be the responsibility of the customer.

Limitation

This warranty is non-transferable and applies only to the original purchaser unless otherwise stated in writing.

FCC warning statements:

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

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.

The device has been evaluated to meet general RF exposure requirement This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.