

# Lithium Battery Pack User Manual



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## About

Shizen Energy India is a top lithium battery pack manufacturer, known for high-performance, advanced energy storage solutions. Our commitment to innovation and sustainability drives our success.

## General Information

Please carefully review and retain this manual for all involved in lithium battery installation, use, or maintenance. Prior to any work, ensure complete understanding and compliance with safety instructions. This manual covers all necessary information for installing, operating, and maintaining lithium batteries in LFP and NMC technology. Adherence to safety directives is mandatory.

## Exclusion of Liability

Shizen Energy India is not liable for damages resulting from improper lithium battery use or failure to follow this manual. This includes personal injury, material, product, or consequential damages. Unauthorized modifications are prohibited.

## Product Description

Our lithium battery is designed for Electric Vehicles (EVs). Adherence to specified applications outlined in this manual is crucial to maintain warranty validity. Improper use may void warranty. Review the manual thoroughly before usage. Compliance with ARAI, BIS, ICAT, and AIS 156 directives. Keep this manual accessible near the battery for safe usage.

## Pre-Installation Checklist

- **Compatibility Verification:** Verify compatibility between the battery and the E vehicle model.
- **Connector Inspection:** Inspect connectors at both ends for cleanliness and debris.
- **Power Switches:** Ensure power switches on both the E vehicle and battery are turned off.
- **Connector Matching:** Check if the connector at the discharging end matches the E vehicle connector in model and color; replace if necessary.
- **Damage Inspection:** Thoroughly inspect the lithium battery for any damage; contact the dealer if damage is found, and refrain from installation or use.

## Step-By-Step Installation Guide

- **Positive Terminal Preparation:** Remove the protective cap from the positive battery terminal.
- **Battery Placement:** Place the battery in the vehicle's recess.
- **Positive Terminal Connection:** Connect the positive terminal to the marked cable lug using an insulated M6 screw (20 Nm torque).
- **Negative Terminal Preparation:** Remove the protective cap from the negative battery terminal.
- **Negative Terminal Connection:** Connect the negative terminal to the marked cable lug using an insulated M6 screw (20 Nm torque), to avoid short circuits.
- **Battery Securing:** Secure the battery against slipping and tipping over using provided aids.
- **CAN Connection:** Connect the CAN connection cable to the top CAN port.
- **Cover Installation:** Close the battery compartment cover for protection, ensuring sufficient ventilation.

**Caution:** Always observe the polarity markings (+) for positive and (-) for negative.

 **Never connect cables with reversed polarity.**

# Battery Charging Guidelines

## Charging Procedure

- **Charging Protocol:** Plug the battery side first, then the AC side during charging.
- **Post-Charging Protocol:** Unplug the AC side first, then the battery side post-charging.
- **Power Outlet:** Use a dedicated wall outlet of 16A (M-socket) for charging.
- **Charger Safety:** Ensure the charger is turned OFF while inserting or removing it from the socket.
- **Vehicle Precaution:** Turn off the ignition and the battery MCB of the vehicle before charging.

## Temperature Considerations

- **Temperature Adjustment:** Adjust charging current at extreme temperatures or stop charging if necessary.
- **Storage Temperature:** Store battery between  $-10^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ .

## Lithium Battery Care

- **Overcharge Prevention:** Never overcharge the lithium battery; use chargers with automatic charge stop function.
- **Temperature Monitoring:** Interrupt charging if the battery becomes too hot.
- **Current Limitation:** Ensure charging current doesn't exceed maximum specified.
- **Charging Protocol:** Charge lithium battery before use and disconnect when not in use.
- **Charger Compatibility:** Use chargers with parameters specified in the technical data sheet.

## Charging Safety

- **Connection Verification:** Check for proper connection without heating or sparking on the wall plug.
- **Connector Maintenance:** Ensure the charging connectors are free from water, dust, and debris.
- **Post-Charging Procedure:** Disconnect charger from the battery after charging completion.
- **Charging Duration:** Plug out the charger after 5 hours of charging for Li-ion battery.

## Maintenance

- **Avoidance:** Battery terminals should never contact water.
- **Maintenance:** Maintain SOC above 50% if idle for an extended period; recharge to 50% SOC every 30 days.
- **Prompt Charging:** Immediately charge the battery when fully discharged to avoid damage.
- **SOC Management:** Avoid keeping battery below 10% SOC.
- **Inspection:** Regularly check wire insulation for cuts or wear.
- **Protection:** Protect charger from direct sunlight/rain or excessive dust; put it in a ventilated place while charging.
- **Replacement Policy:** Replace damaged connectors promptly, under our supervision.
- **Storage Guidelines:** Always store the charger in a dust-free, ventilated environment away from direct sunlight, rain, or excessive dust.
- **Charging Timing:** Avoid immediate charging after a long drive; prefer charging at night.
- **Washing Protocol:** Remove battery from the vehicle before washing with water to prevent damage.
- **Storage Precautions:** Store battery away from corrosive materials, fire, and heat sources.



## Key Points To Remember

- **Mileage Variation:** New battery mileage may vary due to factors like road conditions, gradients, start-stop cycles, acceleration, and charge level.
- **Battery Degradation:** EV batteries gradually degrade over time, resulting in reduced mileage. Mileage is highest on day 1, lower on day 30, and even lower on day 90.
- **Range Factors:** Range depends on various factors including road conditions, traffic density, tyre pressure, gradeability, load, driving style, vehicle condition, and battery maintenance.
- **Warranty Coverage:** Battery warranties typically cover manufacturing defects only, not performance deterioration. Carefully review warranty clauses before claim.
- **Maintenance Impact:** Neglecting proper maintenance can worsen mileage and battery condition in e-rickshaws.

# Warranty Coverage

The warranty applies if:

- The battery pack is purchased from Shizen Energy.
- The product has the official Shizen Energy serial number.
- It is installed within the specified territory.
- It is installed, operated, and maintained according to the provided instructions.
- It is connected with a compatible charger provided by Shizen Energy.

# Exclusions From Standard Warranty

The following circumstances will not be covered:

- Controller/Motor failure.
- Failure to comply with safety regulations regarding the battery.
- Unauthorized repairs to the battery.
- Improper use, including accidents and external influences beyond Shizen Energy's control.
- Any attempt to modify the product's lifespan without written confirmation from Shizen Energy.
- Damage due to improper storage before installation.
- Damage during battery transportation.
- Exposure to water, conductive dust, or corrosive gas.
- Damage from environmental hazards or natural calamities.

# Claim Policy

- **Contact:** Claims should be made to Shizen Energy, the original product seller.
- **Notification:** You must notify Shizen Energy within 48 hours of discovering a defect.
- **Procedure:** To claim under this warranty, you must:
  1. Present the original certificate of warranty declaration.
  2. Submit the original invoice showing the product's procurement date.
- **Verification:** We may request further information or root analysis testing to verify the defect.
- **Dispute Resolution:** If you dispute Shizen Energy's verification, the product must be evaluated by a government-certified testing lab or certified third-party testing company.
- **Replacement Policy:** If the product is unavailable, Shizen Energy may replace it with a refurbished or different product or parts with equivalent functions and performance based on the latest technical information available.

## Scan For Troubleshooting / Problem Solving



Use your device's camera to scan and resolve issues instantly.

 **DO'S**

- **Readiness:** Read and understand battery pack user manual.
- **Charging:** Use supplied charger in cool area away from Sunlight.
- **Preservation:** Keep key switch OFF when not in use to prevent power loss.
- **Monitoring:** Monitor battery health on display meter while running.
- **Replenishment:** Recharge when SOC is below 20%.
- **Maintenance:** Maintain battery between 20% - 80% SOC when turning OFF.
- **Inspection:** Regularly inspect battery for damage.
- **Safety:** Keep battery away from sharp metallic objects, sparks, and flames.
- **Emergency:** Use sand or Class D fire extinguisher in the event of a fire.

 **DON'TS**

- **Service:** Dismantle or service battery without authorized personnel.
- **Safety:** Tamper with terminals or short-circuit cables.
- **Protection:** Overdischarge beyond operating voltage range and after cut-off alarm.
- **Avoidance:** Expose battery to water or moisture.
- **Caution:** Add external load to battery output.
- **Compatibility:** Use unspecified or modified chargers.
- **Supervision:** Leave battery unattended while charging.
- **Procedure:** Remove charger without turning key switch OFF.
- **Limitation:** Use discharged battery below 10% SOC.
- **Management:** Turn battery switch OFF below 20% SOC.
- **Inspection:** Use damaged battery.
- **Usage:** Use battery for unintended purposes.

# Warranty Card

## Customer Information

Customer Name: .....

Phone Number: .....

E-mail: .....

Customer Address: .....

City: .....

Pincode: .....

State: .....

## Product Information

Invoice No: .....

Date of Purchase: .....

Warranty Valid Till: .....

Serial No: .....

**Dealer  
Signature & Stamp**

**Shizen Energy  
Signature & Stamp**



## Contact Information



[service@shizenenergy.in](mailto:service@shizenenergy.in)



9150079890



[www.shizenenergy.in](http://www.shizenenergy.in)

For technical assistance, service centers, repairs, or installations, contact us anytime via WhatsApp.

## Manufacturer Address



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