



OWNER'S MANUAL

Modz LiFePO4
Battery system



BATTERY INFORMATION

THANK YOU FOR YOUR PURCHASE

Your battery must be registered within 60 days of purchase to activate the 10 year limited warranty. Batteries not registered within 60 days of purchase will carry a 1 year limited warranty only!

Scan to register your battery



LITHIUM BATTERIES

NANO



38.4V 60Ah *

51.2V 60Ah *

51.2V 105Ah

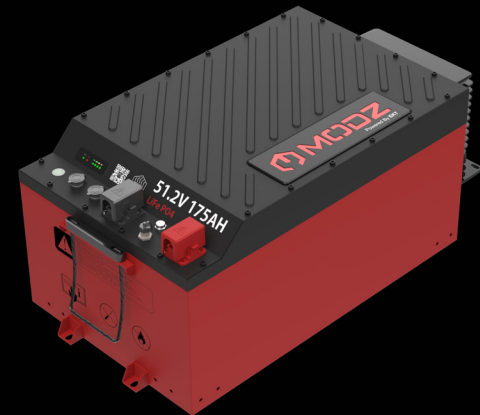
* No Heater

SLIM



51.2V 105Ah

BLADE



51.2V 175Ah

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BATTERY PARAMETERS

| Model | NANO | | | SLIM | BLADE |
|------------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Battery Size | 38.4V 60Ah | 51.2V 60Ah | 51.2V 105Ah | 51.2V 105Ah | 51.2V 175Ah |
| Battery Cell Chemistry | Lithium Iron Phosphate | | | | |
| Battery Cell Type | High Current Prismatic | | | | Prismatic Blade |
| Cell Layout | 2P12S | 2P16S | 1P16S | 1P16S | 1P16S |
| Nominal Voltage | 38.4V | 51.2V | 51.2V | 51.2V | 51.2V |
| Nominal Capacity | 60AH | 60 Ah | 105 Ah | 105 Ah | 175 Ah |
| Total Energy | 2.30 kWh | 3.07 kWh | 5.38 kWh | 5.38 kWh | 8.96 kWh |
| Dimensions (L)x(W)x(H) | 14.0" x 13.8" x 11.0" | 14.0" x 13.8" x 11.0" | 14.0" x 13.8" x 11.0" | 22.0" x 9.76" x 10.4" | 23.8" x 13.6" x 10.8" |
| Weight | 69 lbs | 78 lbs | 104 lbs | 110 lbs | 175 lbs |
| Continuous Discharge Current | 200A | 200A | 250A | 250A | 260A |
| Peak Discharge Current @ 10s | 450A | 450A | 550A | 550A | 550A |
| Peak Discharge Current @ 5s | 500A | 500A | 600A | 600A | 600A |
| Internal Heater | No | No | Yes (Standard) | Yes (Standard) | Yes (Standard) |
| Operation Temperature | -4F to 140F | | | | |
| Charging Temperature | 32 F to 140F | | | | |
| IP Protection | IP67 | | | | |
| Case Type | Powder Coated Steel | | | | |

READ BEFORE INSTALLATION



HEAVY
TEAM ASSISTED LIFTING



HIGH VOLTAGE
HANDLE WITH CARE



DO NOT PRESSURE
WASH OR SUBMERGE



CHARGE BATTERY
BEFORE USE

High Voltage Alert: Installation or maintenance of this battery requires specialized training—do not proceed without it.

Pair exclusively with parts that match the battery's exact voltage and amperage specifications.

Do not handle or link to the terminals until you've manually powered down the battery.

Never disassemble or try to repair the battery; all internal parts are not serviceable by non-qualified users.

Daily Charging Routine: Charge the battery each day to maintain optimal capacity and ensure it is ready for operation.

Charging halts automatically if the battery's core temperature dips under 34°F.

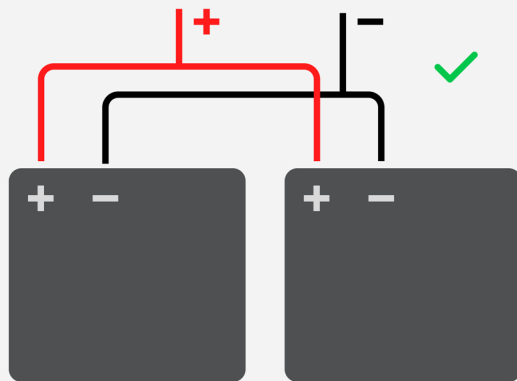
Avoid high-pressure rinsing, submerging the battery in liquid, or using harsh chemical cleaners during maintenance

For cleaning, gently wipe with a plain damp cloth—avoid any chemical additives.

CONNECTING BATTERIES IN PARALLEL

Parallel Connection

The battery capacity will increase by connecting additional battery together in parallel electrically as shown below.



- Connect a maximum of two batteries in parallel to increase total capacity. The system voltage will not change.
- Always use an external busbar with positive (+) and negative (-) cables of equal length.
- Use only identical battery models and ensure each battery is fully charged before installation.
- To maintain balance, charge each battery individually on a regular schedule.
- Charging: Only non-Can communications batteries can be charged in configuration. CAN communication battery charging is not feasible. ⓘ
- State of Charge (SOC) Display: The onboarding battery's SOC display shows only its own status and does not provide a combined reading for batteries connected in parallel. ⓘ

ⓘ **NOTE** If parallel is a requirement, please contact MODZ for support .

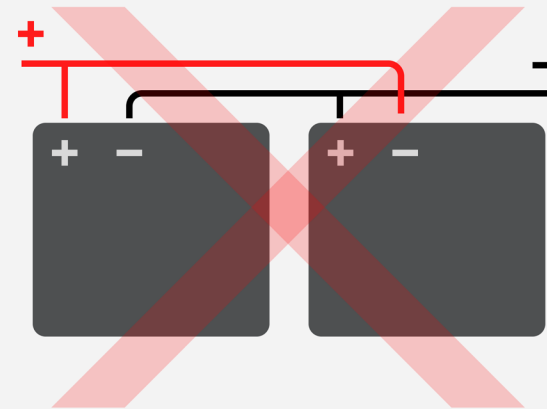


AVOID THESE TYPES OF CONNECTIONS

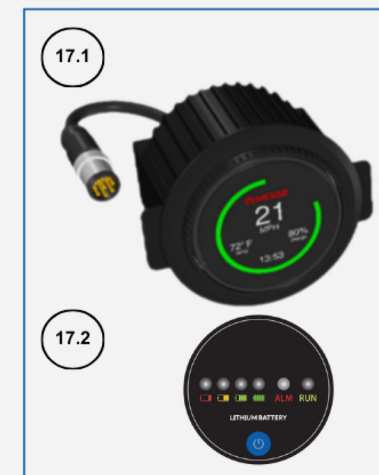
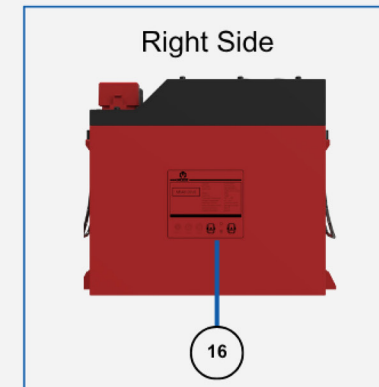
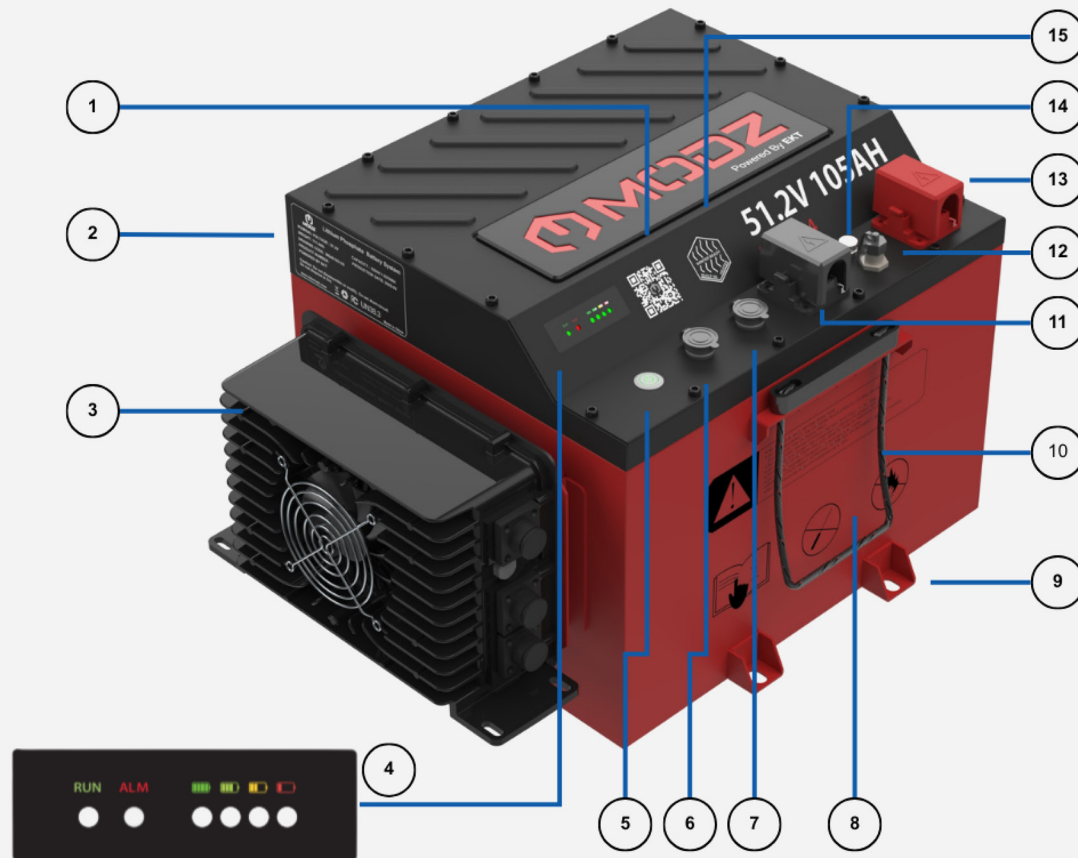
Do not install batteries **in series**. This may permanently damage the battery.



Do not install batteries in **reverse polarity**. This may permanently damage the battery



BATTERY COMPONENTS



- ① **App Activation QR-code**

- ② **Nameplate / Data Plate**

- ③ **Single Phase Onboard Lithium Battery Charger**

- ④ **Integrated LED Battery Level & Fault Indicator**

- ⑤ **Power Push-Button Switch**

- ⑥ **Communication Port 1 (Golf Cart)**

- ⑦ **Communication Port 2 (Charger)**

- ⑧ **Warning Label**

- ⑨ **Mounting Foot**

- ⑩ **Battery Carry Handle**

- ⑪ **P- / C- Terminal**
Negative pole of the battery: charging and discharging at the same port

- ⑫ **External Gauge Connection Port**

- ⑬ **P+ / C+ Terminal**
Positive pole of the battery: charging and discharging at the same port

- ⑭ **Safety Pressure Relief Valve**

- ⑮ **Heater Icon**

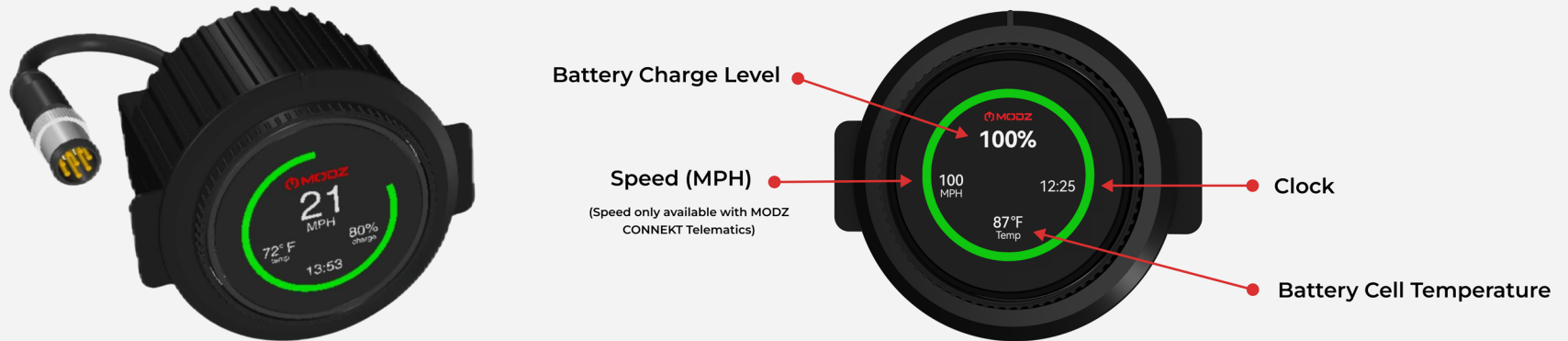
- ⑯ **Battery Specification Label**

- ⑰.1 **External Battery Gauge (Opt)**

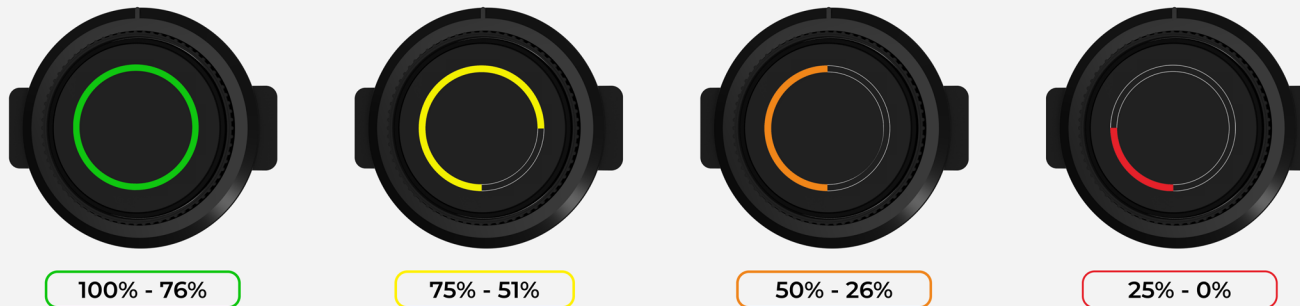
- ⑰.2 **External Battery Gauge (Standard on 60Ah models)**

1.3" LCD SMART DIAL DISPLAY

This model features a 1.3-inch IPS circular display with a 240 x 240 high-resolution screen, supporting advanced multi-state UI interfaces and smart interactive functions. The gauge includes an integrated battery wake-up button. Press firmly in the center to wake a sleeping battery, or press and hold for five seconds to power the battery off. This gauge is standard on all 105Ah and 175Ah models, and available as an optional purchase for 60Ah batteries.



STATE OF CHARGE RANGES



THREE STATUS SCREEN DISPLAYS



Standby



Battery Charging



Fault

ADJUSTABLE SCREEN DISPLAY



Speed MPH

(Only available with MODZ CONNEKT Telematics)



Battery Charge Level



Clock Display



Battery Temperature

FAULTS & WARNINGS

Low SOC Alert: When SOC drops to 25% or below, the buzzer will sound an alert. If not charged in time, the buzzer will repeat the alert every 30 seconds.

Fault Alert:

When a fault is detected, the buzzer emits three "beep" sounds (two short, one long), and a fault icon appears on the screen. If the fault persists, the buzzer will repeat the alert every 30 seconds.

1.3" LED INDICATOR

The external LED battery display is included with 38.4V 60Ah and 51.2V 60Ah batteries.

This model provides a clear and bright stage of charge (SOC) display with simple power on/off button.



- Yellow / Red Alarm
- Green Running
- Blue On / Off Power Button



HOW TO CONNECT THE LED INDICATOR TO THE BATTERY

1. Switch

- Press down to turn on, press again to come back and turn off.

2. Battery Status

- Green LED: Run
- Yellow LED: Minor Alarm
- Red LED: Serious Protection (Cuts off MOSET)

3. State-Of-Charge

- Green LED 1 - LED 2, from left to right, indicates 25%, 50%, 75%, and 100% charge levels

4. For Parallel Battery System

- Typically, only one display is needed for a parallel connection system. Monitoring one battery represents the system status.
- The external switch controls the battery connection only.

LED REFERENCE CHART



Integrated LED Battery Level & Fault Indicator

| LED | | L1● | L2● | L3● | L4● |
|-----|----------|-----|-----|-----|-----|
| SOC | 0~25% | Off | Off | Off | On |
| | 25%~50% | Off | Off | On | On |
| | 50%~75% | Off | On | On | On |
| | 75%~100% | On | On | On | On |

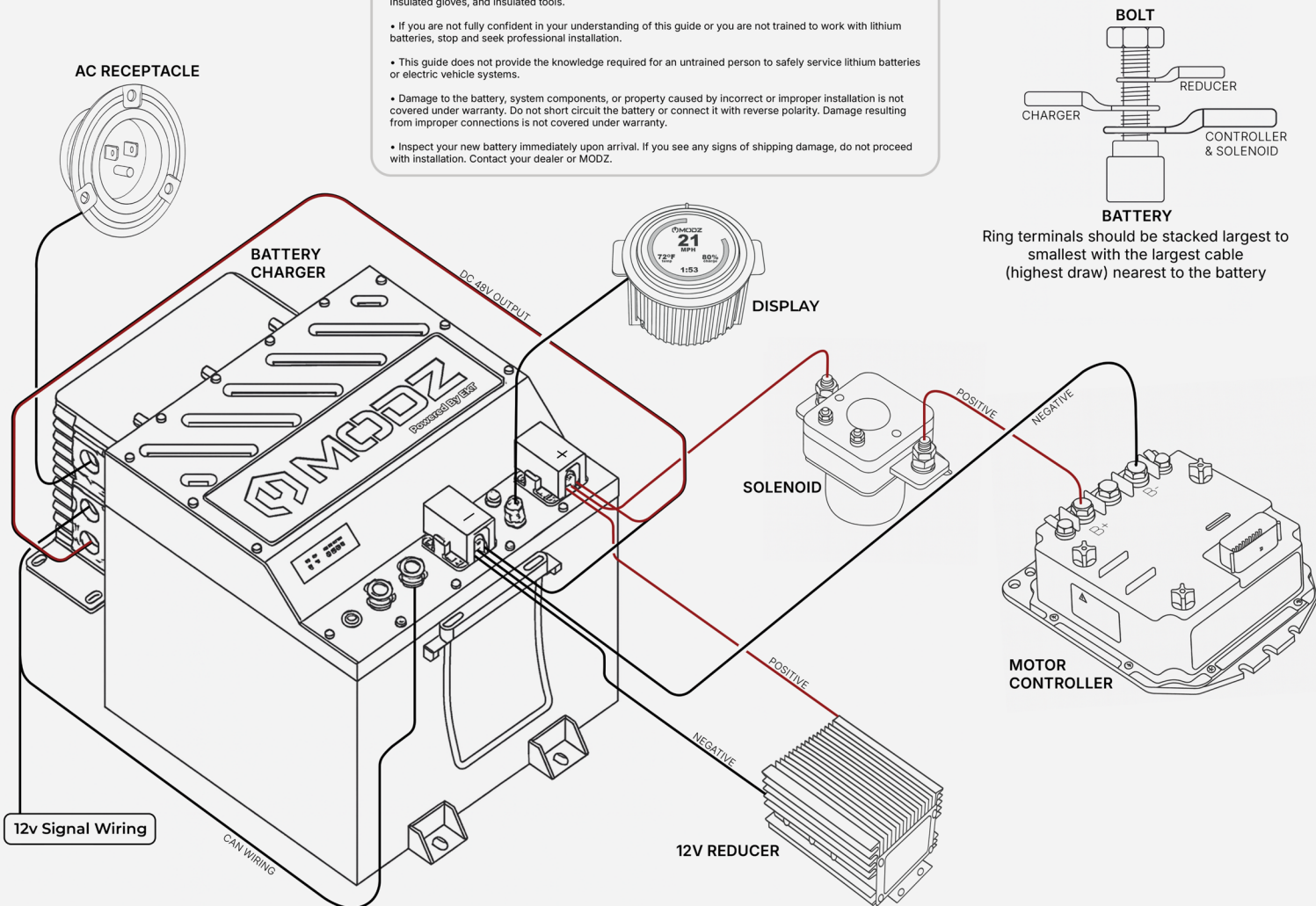
| Status | Normal/Warning/Protection | Run LED | ALM LED | SOC LED | | | | Note |
|-------------|----------------------------|--------------|--------------|-----------------------------|-----|-----|-----|-------------|
| | | ● | ●● | L1● | L2● | L3● | L4● | |
| Power off | Sleep | Off | Off | Off | Off | Off | Off | |
| Stand by | Normal | On | Off | According to SOC indication | | | | Stand by |
| | Warning | On | ● Flash | | | | | Low voltage |
| | No Communication | ● Long Flash | ● Long Flash | ● Long Flash | | | | |
| Charge | Normal | On | Off | According to SOC indication | | | | |
| | Warning | On | ● Flash | | | | | |
| | Over charge protection | Off | ● Flash | On | On | On | On | Stop |
| | Over current protection | Off | ● Flash | Off | Off | Off | Off | Stop |
| Discharge | Normal | On | Off | According to SOC indication | | | | |
| | Warning | On | ● Flash | | | | | |
| | Low voltage protection | Off | ● Flash | Off | Off | Off | Off | Stop |
| | Over current/short circuit | Off | ● Flash | Off | Off | Off | Off | Stop |
| Temperature | Protection | Off | ● Flash | Off | Off | Off | Off | Stop |

INSTALLATION DIAGRAM

WARNING

Working with lithium batteries involves risk. Always use proper safety gear, including protective eye wear, insulated gloves, and insulated tools.

- If you are not fully confident in your understanding of this guide or you are not trained to work with lithium batteries, stop and seek professional installation.
- This guide does not provide the knowledge required for an untrained person to safely service lithium batteries or electric vehicle systems.
- Damage to the battery, system components, or property caused by incorrect or improper installation is not covered under warranty. Do not short circuit the battery or connect it with reverse polarity. Damage resulting from improper connections is not covered under warranty.
- Inspect your new battery immediately upon arrival. If you see any signs of shipping damage, do not proceed with installation. Contact your dealer or MODZ.





Access real time telematic battery information
from the comfort of your phone.

SCAN TO DOWNLOAD



THE APP



IN-APP ERROR CODES

| | | |
|----|--------------------------------------|--|
| 0 | Charging Cell High Voltage | Battery is fully charged. |
| 1 | Discharging Cell High Voltage | Cell voltage too high during discharge. Contact supplier. |
| 2 | Charging Cell Low Voltage | Cell over-discharged during charging. Contact supplier. |
| 3 | Discharging Cell Low Voltage | Likely over-discharge. Recharge battery. |
| 4 | Charging High Total Voltage | Battery is fully charged. |
| 5 | Discharge High Total Voltage | Battery voltage too high during discharge. Contact supplier. |
| 6 | Charge Low Total Voltage | Battery over-discharged during charging. Contact supplier. |
| 7 | Discharge Low Total Voltage | Likely over-discharge. Recharge battery. |
| 10 | Charge Voltage Difference | Check cell voltages at connector pins. Battery balancing if needed. |
| 11 | Discharge Voltage Differencet | Check cell voltages at connector pins. Battery balancing if needed. |
| 12 | Charge High Temperature | Stop operation and let battery cool. Check ambient and working conditions. |

IN-APP ERROR CODES

| | | |
|-----|---|--|
| 13 | Discharge High Temperature | Stop operation and let battery cool. Check ambient and working conditions. |
| 14 | Charge Low Temperature | Battery too cold. Check ambient and working conditions. |
| 15 | Discharge Low Temperature | Battery too cold. Check ambient and working conditions. |
| 16 | Charge Temperature Difference | Large temperature gap between cells. Contact supplier. |
| 17 | Discharge Temperature Difference | Large temperature gap between cells. Contact supplier. |
| 18 | Fast Charge Over Current | Check charger output vs. battery specs. |
| 21 | Continuous Discharge Over Current | Check the golf cart power draw against battery specifications. |
| 22 | Instantaneous Discharge Over Current | Check the golf cart power draw against battery specifications. |
| 141 | Abnormal Current | Short Circuit Protection. Disconnect load and inspect circuit. |
| 145 | Heating Fault | Check heater circuit and components. |

BATTERY CHARGING PROCEDURE

1. Turn off the golf cart key switch.
2. Verify that the battery power switch is set to ON.
3. Insert the charging connector into the cart first, then plug the charger into the AC wall outlet.
4. Charging will start automatically. Check the charger's LED indicator to monitor charging progress.
5. The system will automatically stop charging once the battery is fully charged.
6. Disconnect the charger by unplugging it from the AC wall outlet first, then remove the connector from the cart.

SLEEP MODE

BMS will switch to sleep mode (=low consumption mode) at any of below situations.

- If the metal switch is turned off after 6 seconds or powered off from digital display by holding for 5 seconds.
- If over-discharged protection fault lasts more than 30 minutes.
- If stand-by with no communication, no discharge or charge, lasts more than 7 days.

BATTERY MAINTENANCE

MODZ Lithium battery requires zero maintenance if compared with traditional batteries.

Regular inspection is essential to maximize battery life. A routine check, at least once a month or as part of the daily/weekly golf cart inspection, is required to maintain optimum performance. Ensure the battery is turned off and the charger is not connected to the AC wall outlet.

1. Ensure the battery top is clean, dry, and free of dirt and grime, and inspect the battery case for obvious signs of physical damage or warpage.
2. Inspect the terminals, screws, cables, and the charging and discharging power plug, these components should be clean, tight, and free of corrosion.
3. Fully recharge the battery according to usage:
 - Fully recharge the battery once per week when the golf cart operates for over 8 hours per day.
 - Fully recharge the battery once per month when the golf cart operates for under 8 hours per day.



CAUTION

Risk of Damaged Device

- Never clean the system or its parts using vapor jets or spray water. Dirt and water may enter the system and cause significant damage.
- Use only a clean, moist cotton cloth for cleaning.

LONG TERM BATTERY STORAGE (WAREHOUSING)

- Power off the battery before long-term storage.
- Store batteries separately from other materials in a noncombustible, well-ventilated structure with sprinkler protection. Ensure sufficient clearance between walls and battery stacks. Avoid placing batteries near heating equipment or exposing them to direct sunlight for extended periods.
- Do not store batteries above **95°F** (35°C) or below **-4°F** (-20°C). Store them in a cool environment (around 68°F ± 41°F), with low humidity, good ventilation, and minimal temperature fluctuations. Elevated temperatures can reduce battery cycle life, and temperatures exceeding **140°F** (60°C) can cause the battery to vent flammable liquids and gases.
- Keep batteries in their original packaging until use and avoid mixing them.
- Recharge batteries every 3 months.
- Before delivery/first time working after long time storage, do 2 cycles full discharge & charge for BMS to calibrate SOC.
- Store the battery system in an environment that is:
 - Low humidity
 - Shielded from direct sunlight
 - Rainproof
 - Away from heat sources

BATTERY TRANSPORTATION

According to PACKING INSTRUCTION 965 ~ 967 of IATA DGR 60th Edition for transportation, the special provision 230 of IMDG (inc Amdt 38-16). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrated and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.

Battery Transportation Requirements

- The battery should be rainproof, waterproof and shockproof
- During transportation and transit.
- Battery shall always stay in up-right position during transportation.
- Please pay attention to weight limit.
- Temperature range during transportation : **14°F** (-10°C) & **104°F** (- 40°C)



Lithium Battery is **Class 9** DGR commodity,
you may need to comply with local safety regulation

FIRST AID MEASURES

- **Skin contact:** Although not anticipated, if the battery leaks and the material contact the skin, flush with copious amounts of clear water for at least 15 minutes.
- **Eye contact:** Although not anticipated, if the battery leaks and the material contact the eyes, flush with copious amounts of clear water for at least 15 minutes. Seek medical attention immediately.
- **Inhalation:** Although not anticipated, if the battery leaks and inhalation occur, remove to fresh air. If irritation persists, seek medical advice.
- **Ingestion:** Although not anticipated, if the battery leaks and material is ingested, rinse the mouth and surrounding area with clear water immediately. Seek medical attention immediately for treatment

FIRE FIGHTING MEASURES

- **Unusual Fire and Explosion Hazards:** Batteries may explode or leak potentially hazardous vapors if exposed to excessive heat (above the maximum rated temperature specified by the manufacturer), fire, overcharging, short circuit, puncturing, or crushing.
- **Hazardous Combustion Products:** Fire, excessive heat, or overvoltage conditions can produce hazardous decomposition products. Damaged batteries may rapidly heat up and release flammable vapors.
- **Extinguishing Media:** Dry chemical type extinguishers are the most effective for extinguishing a battery fire. A CO2 extinguisher is also effective.
- **Fire Fighting Procedures:** Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. When applying water, exercise caution as burning pieces and flammable particles may be ejected from the fire.

SAFETY INSTRUCTIONS

- Batteries are designed for recharge-ability. Use the correct model chargers and follow specified conditions.
- Always use supplied MODZ extension cord for charging.
- Never disconnect charging plugs directly during charging. Always stop charging first.
- Do NOT short circuit the positive and negative poles at any time. Short circuits cause heating, reduce battery life, and can ignite surrounding materials.
- Physical contact with a short-circuited battery can cause skin burns.
- Do NOT wear watches or other metal products during repairs.
- Do NOT damage battery cells by puncturing or exposing them to fire.
- Never disassemble or modify an individual battery.
- Avoid immersing, throwing, or exposing batteries to water.
- Keep batteries away from highly corrosive, flammable environments, and heat sources.



CUSTOMER SERVICE

884 - 663 - 9872



BATTERY INFORMATION

<https://www.ridemodz.com/modz-lithium-battery/>

REV: 2026.1



ONLINE OWNER'S MANUAL



RIDEMODZ.COM