PRO-POWER



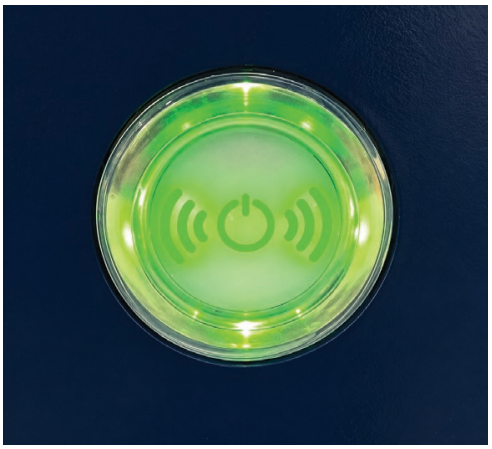
628AH 24V A/B BATTERY

OPERATION & MAINTENANCE MANUAL

Email: info@pro-pak.com | Website: www.pro-pak.com

1 BATTERY ON / SLEEP

To turn the battery ON: Press the multifunction button for 0.5 seconds and release. The button LED will turn green. After a few seconds, it will turn off, but the battery will remain ON.



To put the battery into sleep mode: Press and hold the multifunction button for 10 seconds or more. The LED will flash red. Release the button once the LED flashes.

NOTE: Battery draw must be under 5A for the battery to enter sleep mode.

2 BATTERY GENERAL FUNCTION

When ON, the battery will function similarly to a typical lead-acid battery, and its charge will be maintained through the vehicle's alternator or an external battery charger.

NOTE: Battery chargers must be able to output a minimum of 28V DC to reach a full state of charge.

Batteries are designed to be used as a set: Battery A and Battery B form one set.
For optimal battery life and performance, the power (red terminal), ground (black terminal), and interconnect (orange terminal) cables should all be as close to the same length as possible.

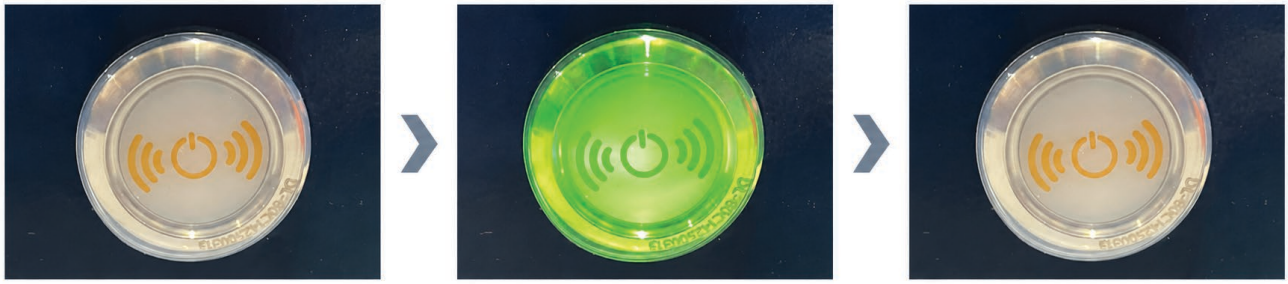
The batteries are weather-sealed and are designed to remain closed throughout their service life. Opening a battery may damage the weather seal, shorten its service life, and void the warranty. If a battery needs to be opened for any reason, it should be shipped to the nearest authorized service center.



3 BATTERY BOOSTING IN THE EVENT OF LOW-VOLTAGE DISCONNECT

If the battery enters low-voltage shutdown, the first step is to try the built-in boost function. To activate this function, press and hold the multifunction button for 3 seconds. The green LED will illuminate, and the built-in boost function will remain active for 60 seconds.
If this fails to start the vehicle and a jump is required:

1. Connect the red positive jumper cable from the positive terminal of the battery supplying auxiliary power to the positive (RED) terminal on Battery A.
2. Connect the negative jumper cable from the negative terminal of the battery supplying auxiliary power to the negative (BLACK) terminal on Battery A.
3. Wake the battery by pressing the multifunction button for approximately 0.5 seconds.
4. Wait approximately 5 minutes.
5. Press and hold the multifunction button for approximately 3 seconds to activate the built-in boost function.
6. Attempt to start the vehicle.



If the vehicle still fails to start, contact technical support.

NOTE: NEVER CONNECT ANYTHING EXTRA TO THE ORANGE TERMINAL. DOING SO WILL VOID THE WARRANTY AND MAY CAUSE BATTERY FAILURE!

4 COLD WEATHER BELOW 0°C / 32°F

If the batteries are exposed to temperatures below 0°C / 32°F, their internal heaters will automatically activate to maintain optimal battery temperatures. The heaters use the batteries' internal capacity, which may reduce the available capacity under these conditions.

If a battery enters low-voltage disconnect (LVD), its internal heater will no longer be active. The battery will require external power (either from a battery charger or an auxiliary battery) to heat the cells and resume normal operation. This will happen automatically when an external power source is applied while the battery is in the LVD state.

NOTE: The cells can discharge power at reduced capacity at temperatures as low as -20°C / -5°F but cannot accept a charge until their temperature rises above 0°C / 32°F.

5 LONG-TERM STORAGE

Batteries should be charged to at least 28V and then placed into sleep mode.

To put the battery into sleep mode:

Press and hold the multifunction button for 10 seconds or more. The LED will flash red. Release the button once the LED flashes.



- Batteries should be visually inspected and charged every 6 months while in storage.
- Batteries should be stored in a cool, dry location within the following temperature ranges:

✓ Storage temperature range: -20°C / -5°F to +30°C / 85°F
✓ Optimal storage temperature range: 10°C / 50°F to 20°C / 70°F

NOTE: When in sleep mode, the internal battery heaters are NOT functional. If the batteries are stored below 0°C / 32°F, the cells must warm to at least 0°C / 32°F before they can be charged.

6 MONITORING

To monitor battery vitals, the **SMART BMS Pro** app is available for both Android and iOS devices.

The app allows users to monitor:

- State of Charge
- Remaining Capacity
- Battery Cell Temperature
- Current Draw
- System Voltage

SMART BMS Pro
DalyBMS

App Store Google Play

Connecting to the Battery Monitor

1. Locate and note the battery's serial number, found on the side and top of the battery.
2. Turn the battery ON.
3. Enable Bluetooth on your device.
4. Open the SMART BMS Pro app.
5. Once the app is open, select "BMS Device" from the available options.
6. Leave the app in "Single unit mode" and select the serial number of the battery you want to connect to from the list (e.g., ST-20xxx).
7. Once selected, you will be taken to the monitoring page.

NOTE: You must be within Bluetooth range of the battery to connect to the monitoring system.

7 AUTOMATIC SHUTDOWN

The battery system is designed to automatically shut down when it reaches its low-voltage disconnect threshold, preserving approximately 20% of its capacity as a reserve.



This reserve is intended to provide power to reactivate the battery system, operate the coolant heater, and subsequently start the equipment.

TYPICAL SEQUENCE (AFTER AUTOMATIC SHUTDOWN)



8 CHARGING

Batteries can be charged either directly from a 24VDC vehicle alternator or from a 24VDC battery charger.

We recommend using a LiFePO4 battery charger, as standard lead-acid battery chargers do not charge the battery to full capacity. To reach full capacity, the battery must be able to charge to 28V.



VOLTAGE LIMITS: 21VDC–28.5VDC

MAXIMUM CHARGING RATE: 0.5C

NOTE: Battery cells must be at a minimum temperature of 0°C / 32°F to accept a charge. See the Cold Weather section for more information.

9 HANDLING

- Always lift the battery using the supplied handles. Never lift it by the terminals or cables.
- Handle with care. Avoid dropping, piercing, crushing, or violently shaking the battery, as these actions can cause internal cell damage. Do not pressure wash.
- These batteries are designed to be used only in the A+B configuration. Do not connect them in series or parallel with any other batteries.
- Nominal battery capacity is 24V 628Ah, with a maximum charging rate of 0.5C, a maximum continuous discharge rate of 0.5C, and up to 2C discharge available for 10 seconds.
- Keep the battery away from direct water immersion and prolonged high-humidity environments. Store and operate in well-ventilated areas.

- These batteries can deliver exceptionally high currents instantly if short-circuited, potentially causing severe electrical arcs, sparks, or even melting.
- Users must wear safety glasses and remove all metal jewelry, including rings, watches, bracelets, etc., before connecting or working near the terminals.
- Keep protective caps on until just before making or disconnecting a connection. Double-check polarity before installation.

BATTERY SPECIFICATIONS

Nominal Capacity: 24V 628Ah

Maximum Charging Rate: 0.5C

Maximum Continuous Discharge: 0.5C

Peak Discharge: Up to 2C (for 10 seconds)

- If the enclosure is damaged (dented, bulging, leaking, or abnormally hot), remove the battery from service immediately, isolate it on a non-combustible surface, and contact Pro-Pak technical support.

10 FIRE / EXPLOSION

- LiFePO4 cells are extremely chemically and thermally stable. Avoid severe mechanical crushing, sustained external short circuits, or prolonged external heating above 60°C / 140°F.



- If the battery begins to fail thermally, disconnect and isolate it from all chargers and loads, provided this can be done safely.
- If the battery is hot or smoking but there are no open flames, carefully move it to a non-combustible area away from flammable structures, only if safe to do so.
- Evacuate all personnel, monitor from a safe distance, and ventilate the area as needed.
- Battery combustion can release toxic fumes, including carbon monoxide, carbon dioxide, and hydrogen fluoride, which is both toxic and corrosive.
- If the battery catches fire, anyone attempting to extinguish it should be equipped with a Self-Contained Breathing Apparatus (SCBA) and full protective gear.
- Fires should be extinguished with Large amounts of water, water is most effective at cooling the surrounding cells and prevents further spread and runaway.
- Once the fire has been extinguished, continue cooling the battery pack with water for an extended period, as the cells may retain internal heat and reignite.
- A Class ABC dry chemical extinguisher may also be used, although it is less effective at cooling the cells.

WARNING: DO NOT USE CLASS D EXTINGUISHERS. These are intended for lithium-metal fires, whereas LiFePO4 batteries do not contain metallic lithium. Also avoid CO_2 extinguishers, as they lack the cooling capacity needed to stop thermal runaway.

PRO-PAK

TECHNICAL SUPPORT & SERVICE

For technical assistance, battery troubleshooting, or general inquiries, please contact our support team.

EMAIL
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WEBSITE
www.pro-pak.com



PRO-PAK 628Ah 24V A+B BATTERY SYSTEM
Operation & Maintenance Manual
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