

Owner's Manual



1. DESCRIPTION

For more than 40 years, Harris Battery has been guided by a single enduring vision of excellence through innovative technology, customer satisfaction, and long-lasting relationships.

The ENERGENIE is an integrated maintenance-free battery and charging system designed to maximize performance of 12 Volt house power, and it is compatible with most industry standard inverters and chargers. It uses LiFePO4 technology allowing higher charge and discharge efficiencies, higher safety and performance, and longer lifecycles. The pack includes a built-in Intelligent Battery Management System (BMS). When it comes to your RV/Marine battery, ENERGENIE has the experience and proven technology to help make your investment a success and to have you ready to hit the road or the water.

2. SAFETY PRECAUTIONS

2.1. Breached ENERGENIE Warning

If the ENERGENIE container is breached, move it to a safe location. Do not ship any damaged lithium battery.

2.2. Use Only Type ABC Fire Extinguisher for this Unit.

2.3. DO NOT Open the Case

DANGER! HIGH CURRENT! Do not attempt to open the ENERGENIE. It is not field serviceable. There are internal components with high voltage and current. The pack must be serviced by the manufacturer or trained personnel only. Attempting to open the pack voids the warranty.

2.4. Discontinue use

If the pack emits an unusual smell, changes color, changes shape, or appears abnormal in any other way, stop using the ENERGENIE immediately.

3. SHIPPING AND RECEIVING

Due to shipping guidelines, your new ENERGENIE will be shipped in a partial state of charge (SOC) at 30% or less SOC. When you receive the pack, inspect, and verify that the pack does not have any physical damage to structure of the case and that all the battery pack terminals are undamaged and covered to ensure a safe and operational device. Refer to the ENERGENIE12V Series specification sheet for electrical and installation specifications.

4. INSTALLATION

Before using and installing the ENERGENIE12V Pack, make sure the pack is fully turned OFF; Then pair it with appropriate charge and/or discharge device(s) by connecting appropriately sized cables based of your load specification (not exceeding 4/0 AWG wire or a maximum rate charge/discharge amps of the ENERGENIE) with an appropriately sized fuse. Follow the instructions of the charge or discharge device to program and set the manufacture charge and discharge parameters according to ENERGENIE12V spec sheet (If this information is not available, please contact install@harris.com May 20, 2022r). ENERGENIE must be fully charged upon installation prior to use.

4.1. Safe Installation

DO:

- Ensure the ENERGENIE is fully turned OFF during the entire installation process.
- Ensure charging and discharging device parameters are set according to manufacturer specification.
- Ensure all terminal and cable connections are tight to the manufacturer torque specification.
- Ensure the ENERGENIE is installed in a clean and safe environment.
- Ensure ENERGENIE is installed in an insulated enclosure.
- Ensure the ENERGENIE is as close as possible to your devices to minimize power loss and voltage drop.

DO NOT

- DO NOT place the ENERGENIE outdoors, exposed directly to the elements.
- DO NOT expose the ENERGENIE to extreme temperatures.
- DO NOT connect the ENERGENIE with any type of battery with different capacity or voltage under any circumstance.
- Do NOT operate the ENERGENIE with loose connections.
- DO NOT install ENERGENIE Packs in series.
- DO NOT use the ENERGENIE without the appropriate equipment to charge or discharge.
- DO NOT short circuit the terminals
- DO NOT discharge below 10.8V.
- DO NOT charge above 14.4V
- DO NOT immerse the ENERGENIE in liquid of any kind.
- DO NOT exceed the manufacturer electrical specifications.

4.2. Installation Design

ENERGENIE12V Packs must be installed sitting flat and bolted against surface where the terminals, and ON, OFF, RESET buttons are on top of the case and easily accessible.

5. OPERATING THE ENERGENIE12V SERIES

- To operate the ENERGENIE after proper installation, simply turn on the pack by pressing and immediately releasing the ON momentary push button (it will take approximately 60 seconds to fully turn ON). (Details about momentary push button are in section 6)
- When the ENERGENIE is turned on, the BMS will perform a housekeeping process to ensure that the ENERGENIE is within its safe operating parameters. If the BMS determines the pack to be in good operating condition it, then proceeds to the next step. If not, it will enter a fault state where red LED light will be lit. (see section 6 below to clear fault)
- Approximately 40 seconds later the GREEN LED light will be ON and followed by two audible clicks. This will indicate the pack is fully ON.

- After the pack is fully ON make sure the GREEN LED light remains solid green prior to use.
- Fully charge ENERGENIE to 100% prior to use.

6. ON, OFF, and RESET BUTTONS with LED LIGHT INDICATORS



Figure 1. Momentary push buttons' layout and labels

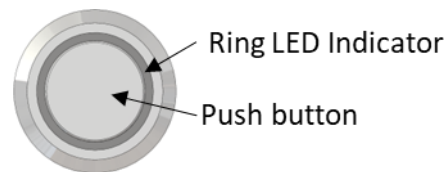


Figure 2. Knowing the momentary push button

Note: To operate the momentary push buttons, always push and immediately release.

- ON button: to turn ON the ENERGENIE simply press the ON momentary push button and release as shown below (Figure 3 left).
- If the LED indicator is GREEN on the ON button, for 60 seconds or more, it indicates the pack is ready for use as shown below (Figure 3).



Figure 3. Momentary ON Push button.



LED indicator ON

- If the LED indicator turns RED on RESET button, it indicates the pack is in FAULT state as shown below (figure 4)



Figure 4. Momentary ON Push button.

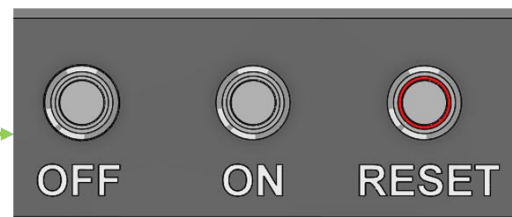


Figure 5. LED indicators Fault.

- RESET button: The reset momentary push button is, used only to manually clear fault as shown below (figure 5).
- If the LED indicator is GREEN on the ON button, for 60 seconds or more, it indicates the pack is ready for use and the fault is, cleared as shown below (Figure 5).



Figure 5 left. Momentary RESET Push button.

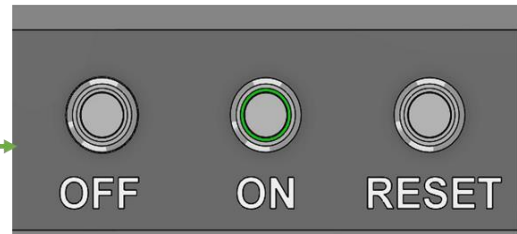


Figure 5 right. Fault cleared.

WARNING: IF THE RED FAULT LIGHT PERSISTS, STOP IMMEDIATE AS THIS COULD BE AS A RESULTS OF UNDER AND HIGH VOLTAGE, LOW OR HIGH TEMPERATURE CONDITIONS, COULD CAUSE THE BMS TO PERMERNENTLY DISABLE THE ENERGENIE PACK, AND WILL REQUIRE MANUFACTURER INTERVENTION.

- If the fault persists fully turn OFF the pack as show below in (figure 6). Then contact technical support.

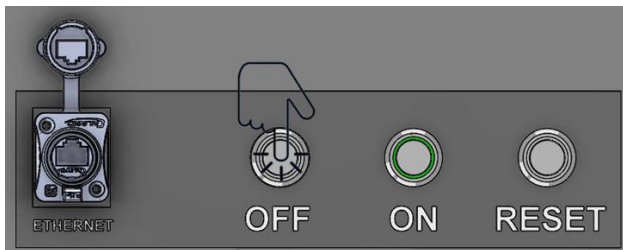


Figure 6. Momentary OFF Push button.



Figure 6. All LED indicators OFF (pack is OFF).

The system must be kept within recommended operating voltage shown on the specification sheet. The ENERGENIE BMS is designed to protect your ENERGENIE Pack from over/under voltage, temperature, and over current limits.

7. TEMPERATURE LIMITS AND HEATING SYSTEM

7.1. Temperature Limits

For best performance keep the ENERGENIE between 5°C (41°F) and 50°C (122°F).

The system will fault when the internal temperature of the pack is 55° C (131°F) or above.

The system will fault when the internal temperature of the pack is 0°C (32°F) or below. (Refer to Figure 5 for Resetting the pack when it is in a fault state, also see section 10.3.b)

7.2. Heating System

The ENERGENIE has a built-in heating system. The heating system automatically turns ON when the pack's internal temperature drops below 5°C (41°F), and automatically turns OFF when the internal temperature is above 5°C (41°F). It is highly recommended to install the ENERGENIE Pack in an insulated or temperature-controlled enclosure. In temperature below 5°C (41°F), this helps mitigate the effects of ambient temperature causing the heating system to stay ON for an extended period. **The heating system depletes the pack if it stays on for an extended period in temperatures below 5°C (41°F). The heating system does not turn ON in subzero weather conditions if the pack is turned OFF. (See section 10.3.b)**

7.3. Temperature Faults

In the event of temperatures above the specified high temperature limit, the pack is inoperable until it has cooled down below the high temperature limit. The operator can impact the ENERGENIE temperature by keeping the pack away from direct sun. ENERGENIE BMS prohibits the pack from being charged or discharged when the internal temperature drops below 0°C (32°F) and above 55°C (131°F). ***Do not attempt to charge or discharge the pack in an event outside of operating temperatures limits as specified.**

8. CURRENT LIMITS

The pack faults when the maximum current limit is exceeded. (See section 6 figure 5 for reset instructions)

9. MAINTENANCE

ENERGENIE does not require user maintenance. The system should be kept clean and free of debris. The ENERGENIE is not field-serviceable. In the event of a failure, contact your supplier or dealer. Any attempt to open the case will void the warranty.

10. STORAGE

The system is best stored between 30% and 100% state of charge (SOC).

Lithium systems self-discharge over time. If the system is in storage, periodic maintenance charges must be performed to keep the system from reaching 0% SOC, every 3 to 6 months.

1. If the system will be sitting unused for any period, do one of the following to avoid depleting the pack to 0% SOC.
 - a) Charge the system up between 30% to 100% SOC and fully turn OFF the pack.
 - b) Or keep the pack plugged in to maintain the pack in float charge state throughout.

2. If you decide to charge the pack between 30% to 100% SOC and fully turn OFF the pack as indicated in option 1.a above, be sure to do the following before using the system again:
 - a) In temperature condition below 10°C (50°F), fully turn ON the pack, make certain GREEN LED indicator light on the ON button stays on for 5 minutes then start charging
 - b) In the event the RED LED indicator light on the RESET button comes ON, then allow the pack to stay in the RED fault state for at least 40 minutes, then manually RESET the pack by pushing the dedicated RESET push button. (See section 6 figure 5). Allowing the pack to remain in fault state for 40 minutes minimum, will let the built-in heating system to warm up the pack above 5°C (41°F) and ready use.
Note: if the pack is stored in a discharged state below 30% SOC, the heating system may fully deplete the pack when performing option 2.b above.

***Do not store the Battery together with combustibles. Pack must be fully turned OFF while in storage.**