BATTERY
USER MANUAL

11.06 kWh | 51.2 V | LiFePO4 Energy Storage Battery

MODEL HS2161611K-HP



ENGLISH • REVISION 1.5 • RELEASED EDITION

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Before You Begin

Read all instructions before transport, installation, wiring or use.

This manual is intended for the Hysolis HS2161611K-HP energy storage battery. Installation, electrical wiring and servicing must be performed by qualified personnel familiar with lithium battery systems and applicable local electrical codes.

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Product identification

Model: HS2161611K-HP

Battery chemistry: Lithium iron phosphate (LiFePO4)

Nominal capacity: 216 Ah / 11.06 kWh

Keep this manual with the product. Product labels, the approved installation drawing, and any model-specific safety notice take precedence if an apparent discrepancy is found; contact Hysolis before proceeding.

01 Safety Instructions

The energy storage battery is a high-current DC device and can cause serious injury if handled incorrectly.

DANGER - ELECTRICAL SHOCK / ARC FLASH Never connect or disconnect DC cables while energized. Confirm all power sources are isolated and verify absence of voltage using appropriate procedures and rated equipment.

WARNING - FIRE / CHEMICAL EXPOSURE Do not disassemble, puncture, crush, modify, short circuit or expose the battery to flame, sparks, standing water or excessive heat. If damaged, swelling, leaking or giving off unusual odor, stop use and isolate the area.

1.1 Qualified personnel

- Only trained, qualified installers may mount, wire, commission or service this battery.
- Wear suitable personal protective equipment; use insulated tools and remove metallic jewelry.
- Follow all local permits, electrical and fire codes, and the associated inverter manufacturer instructions.
- Never use battery terminals or communication connectors as lifting points.

1.2 Placement and environmental safety

- Indoor use only. The enclosure is rated IP20 and is not designed for outdoor exposure or water spray.
- Install in a dry, well-ventilated location away from combustible materials, corrosive fumes and sources of heat or moisture.
- Do not block service access, ventilation openings or the battery circuit breaker.
- Keep children and unauthorized persons away from the battery and its wiring.
- Observe the charge and discharge temperature ratings on the specifications page.

1.3 In an emergency

If you see smoke, fire, significant heat, fluid leakage or enclosure damage: do not touch the battery or attempt to open it. Evacuate as appropriate, call local emergency responders, and inform them that a lithium-ion energy storage battery is present. Do not re-energize a damaged system.

02 Product Specifications

The following specifications apply to the HS2161611K-HP. Installation and electrical connections must comply with approved equipment instructions and applicable electrical codes.

Parameter	HS2161611K-HP
Battery chemistry	LiFePO4
Cell capacity	216 Ah
Nominal voltage	51.2 V
Rated stored energy	11.06 kWh
Operating voltage range	43.2–57.6 V
Maximum charging current	216 A
Maximum discharging current	216 A
Depth of discharge (DOD)	95%
Enclosure protection	IP20 (indoor use only)
Charging ambient temperature	14°F to 131°F
Discharging ambient temperature	-4°F to 140°F
Dimensions (H × W × D)	40.2 × 20.5 × 9.5 in
Weight	288 lb (approx. 131 kg)

Dimensions are shown as height × width × depth. For mounting and equipment clearances, follow the approved installation drawing and Section 4.

Model-specific electrical settings

Setting	Approved value
Maximum charging voltage	57.6 V
Low-voltage disconnect / recovery	40.0 V / 43.2 V
External DC overcurrent protection	250 A
Maximum parallel battery count	RS485: 8 batteries; CAN: 5 batteries
Terminal tightening torque	4–6 N·m
Supported inverter comm type	RS485 (factory default) / CAN
Max. charge / discharge power	11.8 kW / 11.8 kW

03 Product Components and Controls

Identify the components using the labels on the battery and the illustration below.

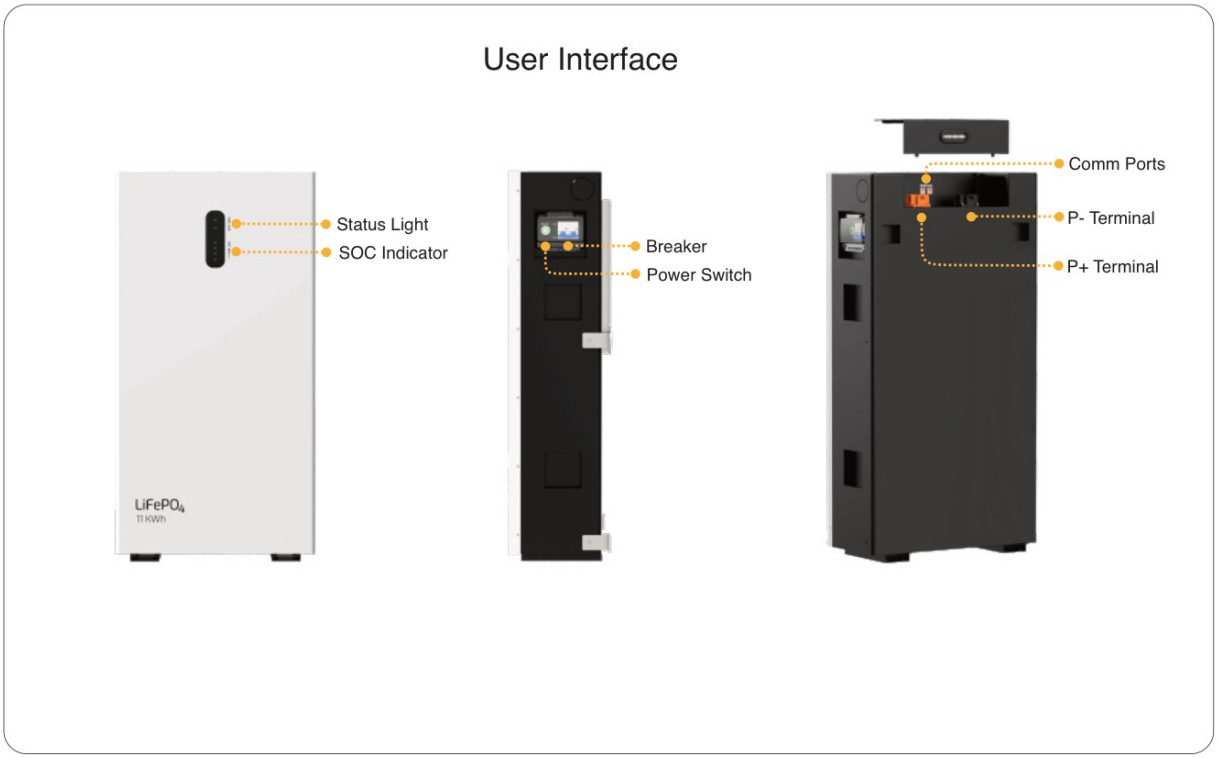


Figure 1. Battery user interface and connection locations.

Label / area	Purpose
Status Light	RUN / ALM operating and alarm indication; see Section 8.4 for BMS LED states.
SOC Indicator	Front LED indication of battery state of charge.
Breaker	Local battery circuit protection / disconnect control.
Power Switch	Battery on/off control; refer to Section 7.2 for startup and shutdown.
P+ / P- Terminals	Positive and negative DC power connections.
Comm Ports	RS485 / CAN communications; RS485 is the factory default.

The terminal cover and access position shown in the illustration are product-specific. Do not remove covers while energized.

04 Installation and Mounting

Install the battery in a floor-standing position and secure it to the wall. The floor must support the full battery weight; attach the restraint hardware in accordance with the supplied mounting instructions.

4.1 Before installation

- Inspect the shipment and enclosure for signs of impact, corrosion, distortion or water intrusion. Do not install a damaged battery.
- Confirm the delivery includes the correct battery, mounting hardware, covers, and any specified power and communication accessories.
- Provide sufficient load-bearing capacity for a battery weight of 288 lb (approx. 131 kg) plus installation hardware.
- Provide clear access for cable routing, disconnect operation, inspection and emergency service.

4.2 Mounting arrangement



Figure 2. Floor-standing installation and wall-restraint hardware (illustrative).

INSTALLATION NOTE Use the approved mounting hardware and structural support appropriate to the installation site. The illustration is not a drilling template; verify wall anchors, restraint details, access, and required clearances against the applicable installation drawing and local requirements.

Installation item	Installation requirement
Mounting type / orientation	Floor-standing, wall-secured
Minimum clearance around enclosure	12 in (maintain required service access)
Recommended surface and structural load	Concrete base supports battery weight; secure to the wall with suitable restraints and anchors.

05 DC Power and Communications

Electrical connections may be performed only after all sources of energy are safely isolated.

DANGER - POLARITY / HIGH CURRENT Reversed polarity, unprotected conductors or loose terminals can cause heating or fire and equipment damage. Verify DC polarity with approved test equipment before energizing.

5.1 Connection preparation

- Verify battery and inverter voltage compatibility. Use only the approved charge profile and communication mode.
- Select conductor ampacity, insulation, protection device, routing, and connector hardware according to the approved design and governing code.
- Confirm the battery breaker and connected inverter are in their prescribed OFF / isolated state.
- Identify the P+ and P- terminals on the actual battery. Connect protective bonding / grounding only at approved grounding points.

5.2 DC power connection - schematic reference

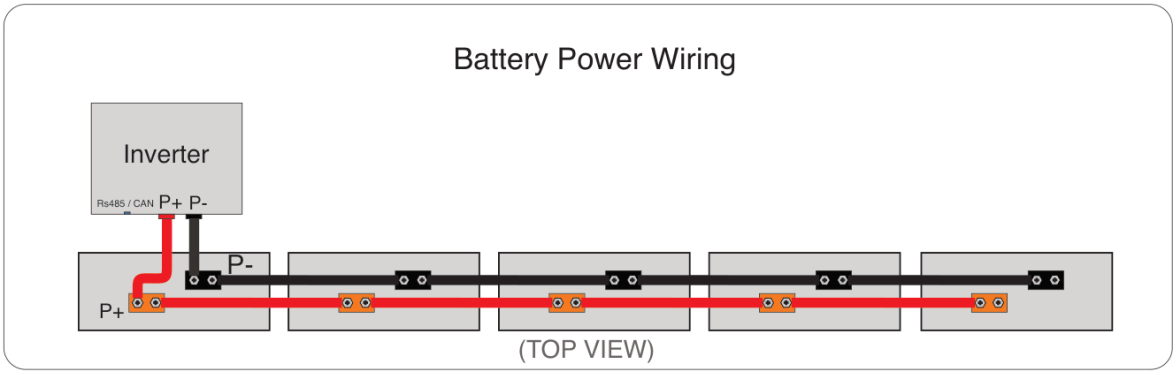


Figure 3. Parallel DC power wiring example (schematic only).

Connect P+ and P− only through appropriately rated DC protection and approved connection hardware. Use the cable configuration in Section 5.3 for a one-way run not exceeding 6 ft, subject to the actual cable and terminal ratings, installation method and applicable code. Use a manufacturer-approved termination or distribution block for multiple conductors; do not stack cable lugs on a terminal unless the terminal is specifically rated for that arrangement. Reinstall all insulating covers before energizing.

5.3 Communications

RS485 is the factory-default communication mode; CAN is also supported. LINK IN and LINK OUT share the RJ45 pin assignment in Section 5.4. Select a compatible inverter communication protocol and use the cable specified for that inverter model.

Critical connection value	Approved configuration / reference
DC cable configuration (≤ 6 ft one-way)	2 × 1/0 AWG copper conductors per polarity; use an approved M6 connection arrangement
P+ / P- terminal torque	M6: 4–6 N·m
Communication RJ45 pinout	See Section 5.4

5.4 CAN/RS485 RJ45 Pin Assignment

LINK IN and LINK OUT use the same RJ45 pin assignment. The numbering below corresponds to the jack and plug orientation illustrated.

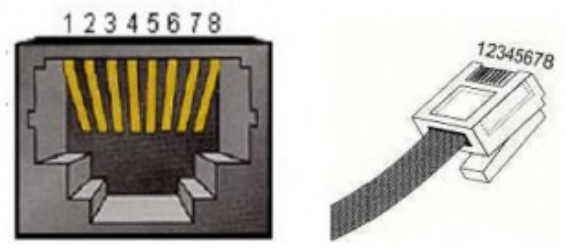


Figure 4. RJ45 jack and plug, pin numbering as shown in the supplied diagram.

Port	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
LINK IN	RS485-B	RS485-A	NC	CAN-H	CAN-L	NC	RS485-A	RS485-B
LINK OUT	RS485-B	RS485-A	NC	CAN-H	CAN-L	NC	RS485-A	RS485-B

NC = no connection. Pin 6 is NC on both LINK IN and LINK OUT. Verify the connector orientation and pin numbering before connecting a communication cable.

06 Parallel Battery Installation

Up to eight batteries can be connected in parallel using RS485 (factory default), or up to five using CAN. Intelligent BMS networking assigns battery addresses automatically, with no manual address coding or master/slave DIP-switch setup. The diagrams illustrate the connection arrangement.

6.1 Battery power wiring

Use approved busbars, matched DC conductor routing and appropriately rated protection. Verify allowable voltage/SOC differences before parallel connection. Do not interpret the number of batteries in the illustration as a separate installation limit.

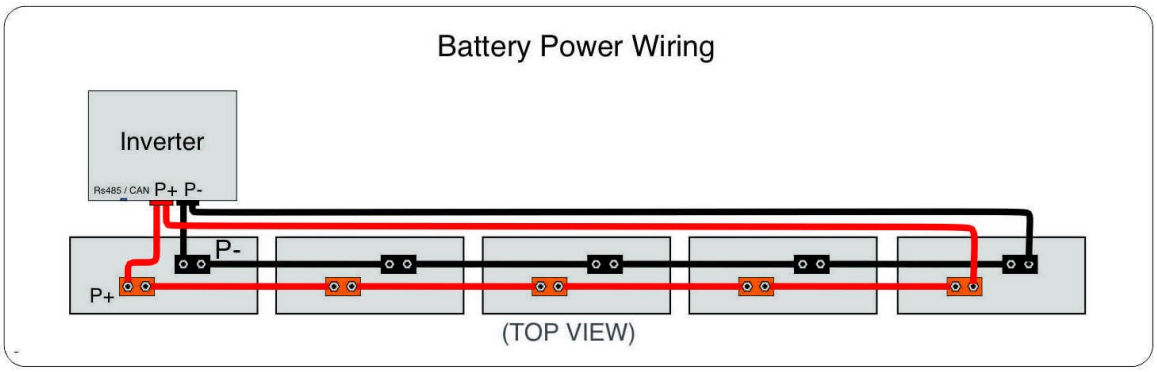


Figure 5. Hysolis multi-battery DC wiring illustration (top view).

6.2 Communication wiring

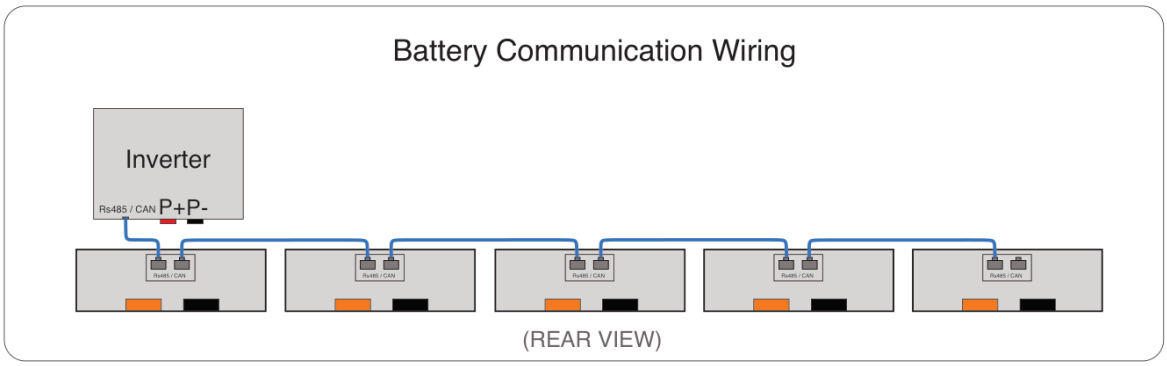


Figure 6. Hysolis multi-battery communication illustration (rear view).

PARALLEL INSTALLATION Match battery voltages and SOC before connecting. Use suitable DC protection, busbars, and equal-length power conductors as specified for the system. Follow the inverter commissioning instructions and do not exceed the communication-specific parallel battery limit.

07 Pre-start Checks and Operation

A qualified installer must complete this checklist before the first startup. Resolve all failed items before energizing the system. Mark N/A only when the item does not apply to the installation.

7.1 Installation verification

Check	Installer check
Enclosure, bracket / stand and anchors are secure	[ ] Pass [ ] Fail [ ] N/A
Area is dry, ventilated, accessible and within temperature limits	[ ] Pass [ ] Fail [ ] N/A
DC polarity and electrical ratings have been verified	[ ] Pass [ ] Fail [ ] N/A
Cables, lugs, covers and approved protection are correctly installed	[ ] Pass [ ] Fail [ ] N/A
Approved grounding / bonding is complete	[ ] Pass [ ] Fail [ ] N/A
Battery-inverter communications and approved protocol are verified	[ ] Pass [ ] Fail [ ] N/A
Inverter charge / discharge settings match the approved battery profile	[ ] Pass [ ] Fail [ ] N/A

Installer name: _____ Date: _____ Battery serial no.: _____
Installer signature: _____

7.2 Startup and shutdown

The battery includes a circuit breaker and a power switch. Use the sequence below and follow the inverter manufacturer's instructions for the connected equipment. After a fault, identify and correct its cause before attempting to restart.

Procedure	Model-approved sequence
First power-on	Battery Breaker ON > Battery Switch ON > Inverter Switch ON
Normal shutdown	Inverter Switch OFF > Battery Switch OFF > Battery Breaker OFF
Restart after a fault	Correct the fault; turn OFF, wait >10 s, then follow the startup sequence

7.3 Normal operation

During normal use, monitor SOC and system status. Do not continue operating with repeated alarms, unusually high enclosure temperature, unusual smell or sounds, visible damage or loose connections. If the cause cannot be safely confirmed, stop operation and contact Hysolis Support.

08 LED Indicators and Troubleshooting

Use these customer-level checks only. Do not open the enclosure or work on live conductors.

8.1 Front LED identification

Indication	What it represents	Exact behavior
RUN	Battery operating status	Refer to Section 8.4 LED table
ALM	Battery warning or alarm	Refer to Section 8.4 LED table
SOC LED indicators	Approximate battery state of charge	Four green LEDs indicate approximate battery SOC.

8.2 Quick troubleshooting

Symptom	Safe initial checks / action
No LEDs visible	Ask installer to verify the switch / breaker state and whether the battery is in a documented sleep mode. Do not touch terminals.
Battery will not charge	Verify inverter settings and operating temperature against the published rating. Seek service if charging remains unavailable.
Battery will not discharge	Review system alarms and load requirements with the installer. Do not bypass protective shutdown.
Inverter reports communication error	Ask installer to check supported RS485 / CAN protocol, the approved cable and connections.
Alarm indicator active	Record the LED pattern and inverter message. If the alarm is abnormal or persists, stop operation and contact Hysolis Support.
Heat, odor, deformation or leakage	Stop use. Isolate the area and seek qualified emergency/service assistance.

8.3 Information for a support request

Record the model, serial number, installation date, inverter model, exact alarm or LED pattern, operating conditions, and relevant photographs taken only when safe.

8.4 Detailed LED Status Reference

The front panel includes one green RUN indicator, one red ALM indicator, and four green state-of-charge (SOC) indicators. The following table summarizes operating, warning, and protection states.

Mode	Condition	RUN	ALM	SOC LEDs	Result
Off	Sleep / power off	Off	Off	Off	All indicator LEDs are off
Standby	Normal	Blink 1	Off	By SOC	Standby
Standby	Warning	Blink 1	Blink 3	By SOC	Warning indication
Charging	Normal	On	Off	By SOC	Normal charging
Charging	Warning	On	Blink 3*	By SOC*	See special overcharge warning below
Charging	Overcurrent protection	Off	On	Off	Charging stops
Discharging	Normal	Blink 3	Off	By SOC	Normal discharge
Discharging	Warning	Blink 3	Blink 3	By SOC	Warning indication
Discharging	Low-voltage protection	Off	Blink 3	Off	Discharging stops
Discharging	Overcurrent / short circuit	Off	On	Off	Discharging stops
Temperature	Protection	Off	On	Off	Charging and discharging stop
System fault	Cell, voltage/current sensor or charge/discharge MOSFET failure	Off	On	Off	Charging and discharging stop

* During an overcharge warning, the highest active SOC LED uses Blink 2. For other charging warnings, the ALM indicator uses Blink 3.

Blink 1, Blink 2, and Blink 3 refer to different BMS indicator patterns. Flash timing may depend on the firmware version. “By SOC” means that the four SOC indicators display the approximate battery charge level. If an alarm persists, record the observed LED pattern and contact Hysolis Support.

NOTICE - This chart describes BMS LED behavior, not permission to reset a protection fault. Do not bypass overcurrent, short-circuit, undervoltage, or temperature protection. Seek qualified support for recurring alarms.

09 Maintenance, Storage and Disposal

Battery maintenance is primarily inspection, correct environmental control, and safe operation.

9.1 Routine checks

- Inspect the exterior periodically for dirt, moisture, corrosion, cracks, damage or blocked access.
- Check system status and battery alerts using approved indicators or the connected inverter.
- Have a qualified installer inspect the electrical connections, enclosure supports, protective grounding and cable condition at the site maintenance interval.
- Clean the enclosure with a soft dry cloth only. Never use a pressure washer, wet cleaning method or aggressive solvent.

9.2 Long-term storage

Turn off and isolate the system using the approved shutdown procedure. Store the battery upright in a dry, well-ventilated indoor location. Avoid direct sun, water exposure, impact and sources of heat. Follow the storage requirements below. Check SOC during extended storage and arrange qualified inspection or recharge as needed.

Storage specification	Hysolis approved value
Recommended SOC before storage	60%-80%
Long-term storage temperature / humidity	14°F to 86°F / 5%-50% RH
Inspection / recharge interval	Every 6 months (inspect; recharge as needed)

9.3 Transport and end-of-life

Prevent terminal contact, protect the enclosure from impact and follow the applicable shipping documentation and lithium battery transportation requirements. Do not dispose of the product with household waste. Contact an authorized battery recycler or Hysolis for recycling guidance.

NOTICE Never open the battery to replace cells or service the BMS. No customer-serviceable internal components are described in this manual.

10 Technical Support and Product Record

Keep the product serial number, installation records, and purchase documentation for future service and warranty inquiries.

Hysolis support

Company: Hysolis Inc.

Website: https://hysolis.com

Customer support: support@hysolis.com

For warranty coverage, exclusions and claim procedures, refer to the model-specific Hysolis limited warranty supplied with the product. This manual does not replace the applicable warranty document.

Document control

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