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1. Receiving & Mounting

BEFORE YOU START

- Review your Warranty (Section 7).
- Familiarize yourself with ALL Safety Instructions (Section 6).

1.1. Receiving

The manufacturer does not assume any liability for damage during transportation or handling. Therefore, upon receipt of EPIC Series Battery House (or related products) immediately unpack, inspect for damage or shortage (Section 1.2), and report issues found (Section 1.3).

1.2. Unpacking & Inspecting

Carefully remove all shipping materials from the EPIC Series Battery House and save until you are sure it is undamaged. Inspect for possible damage, using checklist below. If damage found, follow the instructions for proper reporting in Section 1.3.

Inspection Checklist

- Includes all items on packing list.
- Model number on data nameplate matches your order (see Section 2.2).
- Enclosure exterior and interior are not marred or dented.
- No visible damage to exterior or interior components.
- Internal components are secure.
- Hardware is tight.
- Wire terminations are secure.
- User's Manual is included.

1.3. Reporting Damage or Shortage

If damage or shortage is found, notify the delivery person and make notation on all copies of carrier's receipt before signing. If such is discovered after delivery, notify carrier immediately and request an inspection.

The manufacturer does not assume any liability for damage during transportation or handling. Should the products require an inspection by (or return to) the manufacturer, please contact your sales representative for further instructions.

1.4. Mounting

⚠WARNING	*Do NOT lift, push, or relocate the EPIC Series Battery House with batteries of any type installed within the enclosure.*

The EPIC Series Battery House is designed for floor mounting on a permanent, flat, leveled surface, preferably concrete or other fireproof material. The surface must be capable of supporting the weight of the battery house and installed components. Since the EPIC Series Battery House ships from the manufacturer without batteries installed, total weight of the complete system of house, batteries, charger, etc. is not available with this manual. Please consult your battery and charger manufacturers' literature for appropriate weights and add these to the shipped weight to obtain the total system weight.

Refer to appropriate Foundation Mounting Drawing, according to your unit dimensions, for mounting dimensions, shipped weight, and mounting instructions.

Basic notes that apply to all battery houses, which are also found on the drawing are:

1. We recommend placing the Battery House, then drilling for mounting anchors. Mounting holes are on the Battery House's mounting feet.
2. For seismic compliance, use HILTI M12 HDA-TR Stainless Steel Undercut anchor bolts (not supplied), with a required 5.3-inch embedment.
3. Hole Depth minimum of 5.3" [135mm]; Pad Depth minimum of 8.0" [203mm].
4. Lag the enclosure to the fireproof surface. Follow NEC (NFPA-70), all safety standards, and fire codes of the site in which the Battery House is to be installed.
5. Concrete pad should extend to a minimum of 24" [612mm] from edge of Battery House on all sides. The customer is responsible for ensuring that the concrete pad is sufficient for wind and weight loading. Concrete pad to be 4000 psi or greater.
6. Refer to Custom Drawing Package for conduit entry instructions.

2. Battery House Features

2.1. Introduction

Design

The EPIC Series Battery House is a walk-in, outdoor enclosure with a primary intent to hold large batteries and protect them from the elements. It is available in 12-foot width, in either 12-, 16-, 20-, or 24-foot lengths.

The system starts with two personnel doors, ventilation, and battery racking. The user can build upon this by adding chargers, DC distribution equipment, seismic bracing, spill containment and so on.

Custom requirements beyond our standard options can be integrated through collaboration with the EPIC Systems design and manufacturing team.

Benefits

The EPIC Series Battery House will extend battery life through an environmentally controlled thermal management system. The house provides a means for the operator to remotely monitor the system, and aids in NERC requirements through the following features:

- Intrinsically safe hydrogen mitigation system with a ventilation system ensuring hydrogen never reaches 1% concentration per IEEE 1635 requirements.
- Hindle Health System™ status LEDs shine from the top of each door, making it easy to see if all systems are operating well (GREEN) or if an alarm is present (RED).

2.2. Confirming Battery House Configuration

Obtaining Model Number from Data Nameplate

The EPIC Series Battery House features a data nameplate attached to the inside upper corner of the doors as seen in Figure 1 on the next page.

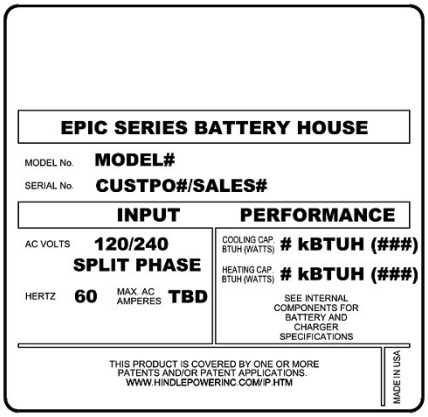


Figure 1 - Data Nameplate on Door

The listed model number is applicable only to the actual enclosure, not the battery charger, batteries, nor any other self-contained device mounted inside the house which is not an accessory of the EPIC Series Battery House. The model number refers to the type of enclosure as described below.

The serial number may be number sequenced to represent multiple units of similar design. The input ratings refer to the house's internal electrical system which may include battery chargers and all environmental accessories (hot/cold weather kits) if supplied. See information listed on the house's internal components (e.g., batteries, battery charger, dc distribution, etc.) for output ratings of those particular items.

How to Read Configured Model Number

The factory-configured model number of your EPIC Series Battery House is coded to describe the size of the house: BHWL where BH is Battery House and W = width and L = length. Width will always be 12 foot, while L will be either 12, 16, 20, or 24.

2.3. Physical Design Features

Designed for Thermal Management & Ventilation (Hydrogen Purging)

The Battery House design meets IEEE 1635-2018,"Ventilation and Thermal Management of Batteries for Stationary Applications." By means of the following design features, illustrated in Figure 2 below, it purges hydrogen to a level of less than 1%:

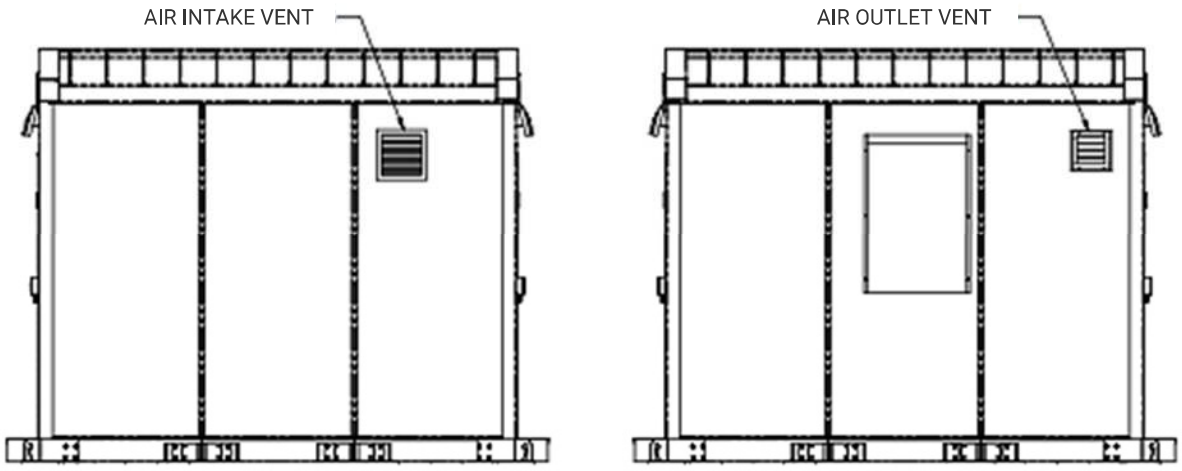


Figure 2 Hydrogen Ventilation System

- Wall-mounted air intake purge fan in one wall.
- Air outlet vent on opposite wall.
- Hindle Health System™ (HHS) — Alerts via HHS status LEDs when attention is required. A full list of alarms that activate the status LEDs is found in Section 3.5.

Seismic Bracing

The Battery House is rated to meet the IEEE 693 Seismic High-Level standard.

2.4. Hindle Health Status Lights (Doors)

Hindle Health System (HHS) status LEDs, installed at the top of each door, shine upon the door, providing easy identification of the house's operational status (Table 1):

Table 1: Status Lights Above Doors

LED	INDICATION
GREEN	EPIC Series Battery House is operating properly and maintaining system reliability.
	No alarms are present for EPIC Series Battery House or for any external devices that are connected to INPUT 1-4 of EPIC's Control Board. See Section 3 for details
RED	Fan Failure has been detected, so environment may build up unsafe levels of hydrogen.
	An external device connected to the EPIC Series Battery House Control Board (INPUT 1-4) is in an alarm state.

2.5. Environmental Control

Battery House cooling is managed through the HVAC unit (Figure 3). The heating, ventilation and air conditioning system is designed to maintain a temperature of 65°F to 78°F. Multiple air HVAC units may be utilized depending on the size of the Battery House.

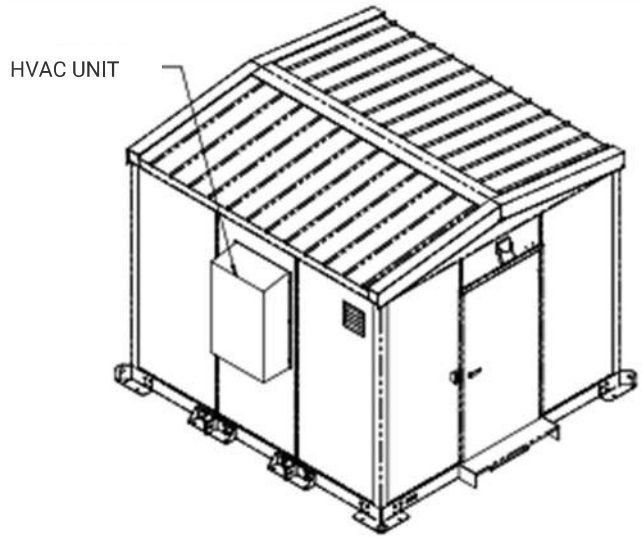


Figure 3 - HVAC Unit

The Battery House temperature is controlled through the HVAC unit's thermostat located inside the house. The thermostat will alarm if the internal temperature rises beyond the user's alarm point.

Further details can be found in the HVAC unit manufacturer's user manual which is included in the binder that comes with the Battery House.

3. Wiring, Control, & Alarms

3.1. Wiring – General Notes

Standard System Wiring

All user-supplied system wiring (e.g., ac line feed, battery charger, battery, dc distribution, …) connected to, from, and within the house should meet National Electric Code (NEC) standards as well as local/site codes. Confirm polarity of all dc cabling before making connections.

All system wiring supplied with the EPIC Series Battery House uses XLPE wire per HindlePower standard CB0002-00. The EPIC Series Battery House is supplied with NEMA two-hole ground pads for grounding electrical equipment.

The Battery House accepts 120/240 VAC split phase as its standard input. Operation is powered by 120 VAC (line, neutral). Battery chargers connected to the house operate from 240 VAC (line, line). Non-standard inputs are available.

Optional Wiring

If ordered as such, the EPIC Series Battery House may be supplied with system cabling from an installed battery charger to an installed dc distribution system. Also, the Battery House may be supplied with user-specified battery cabling of required length and gauge. Pre-wired battery cabling is end-marked with positive (+) red, and negative (-) black leads.

3.2. Control Board – Layout

The EPIC Series Battery House features a simplified control board (Figure 4) which may include factory-wiring and factory-configuration. It also provides several locations for users to wire optional inputs and simple identification of alarms. Each of these features will be discussed next.

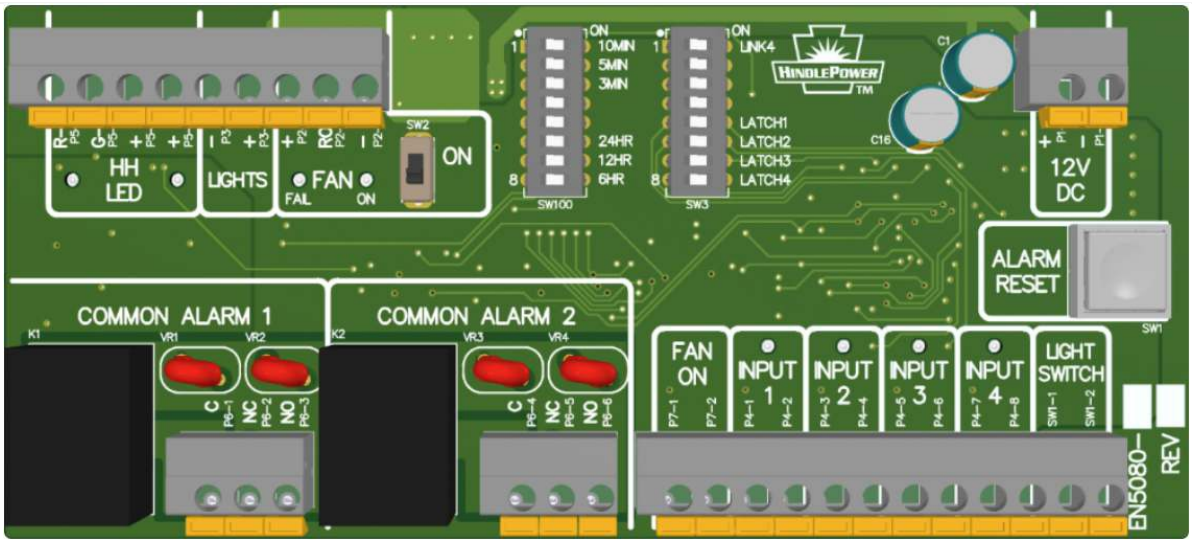


Figure 4 - Control Board

3.3. Control Board – Factory Wired/Configured Features

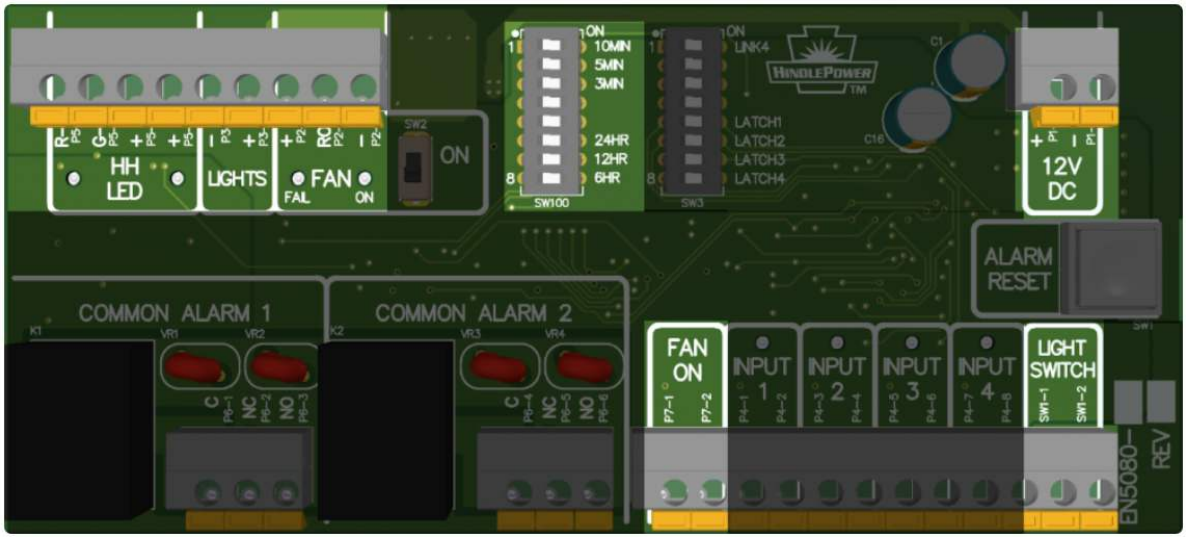


Figure 5 – Factory Wired/Configured Features on Control Board

The modified graphic of the control board in Figure 5 above identifies features that may be wired or configured at the factory. These are detailed in Table 2:

Table 2: Factory Wired/Configured Features on Control Board

NAME	DESCRIPTION
HH LED	Wiring of Hindle Health LED door lamps.
	GREEN illuminates when no alarm condition occurs for Inputs 1-4 or Fan Failure detect.
	RED illuminates when alarm condition is present.
LIGHTS	Wiring for interior LED lighting.
FAN	Provides power to fan.
SW100	Switches that control fan frequency and duration for hydrogen gas mitigation. Not designed for adjustment in the field.
12V DC	Wiring to main power supply.
FAN ON	Wiring to power fan ON.

3.4. Control Board – User Wiring & Communication Options

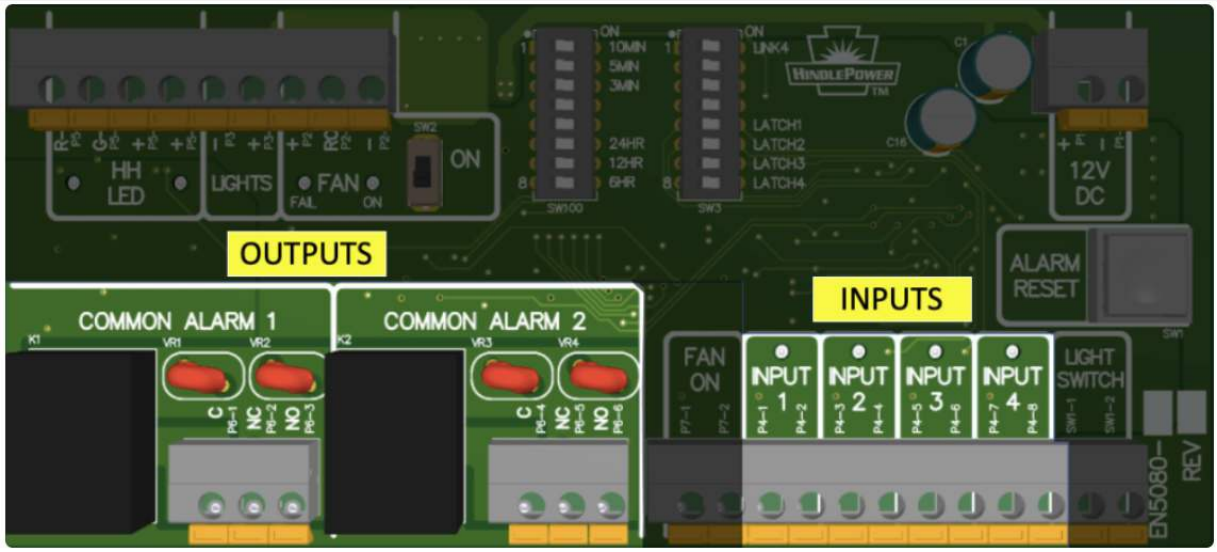


Figure 6 – User Wiring & Communication Options on Control Board

The modified graphic of the control board in Figure 6 above identifies locations where users may connect outputs that provide additional alarm communications abilities or inputs from external equipment and/or sensors. These are detailed in

Table 3 on the following page.

Table 3: User Wiring & Communication Options on Control Board

NAME	DESCRIPTION
COMMON ALARM 1	When HH LED is in RED alarm state, this alarm relay activates.
	Output is typically connected to a substation control room to communicate alarm condition, or similar application.
COMMON ALARM 2	When HH LED is in RED alarm state, this alarm relay activates.
	Output is typically connected to a battery charger which often has more advanced alarm communication functions such as remote communications, or similar application.
INPUT 1	User-customizable alarm input that will activate Hindle Health RED LED on door.
	Often used for over-temperature alarm from AC or heating failure.
INPUT 2	User-customizable alarm input that will activate Hindle Health RED LED on door.
	Often used for under-temperature alarm from AC or heating failure.
INPUT 3	User-customizable alarm input that will activate Hindle Health RED LED on door.
	Often used for hydrogen detector to indicate 2% hydrogen concentration in environment.
INPUT 4	User-customizable alarm input that will activate Hindle Health RED LED on door.
	Often used with hydrogen detector to indicate 1% hydrogen concentration in environment. If LINK4 dip switch in SW-3 is set to ON, then Input 4 will be linked to FAN, causing fan to run when 1% hydrogen exists.

! All other terminals are for factory use only.
Improper wiring to factory-use terminals may cause damage.

3.5. Control Board – User Interaction & Alarms

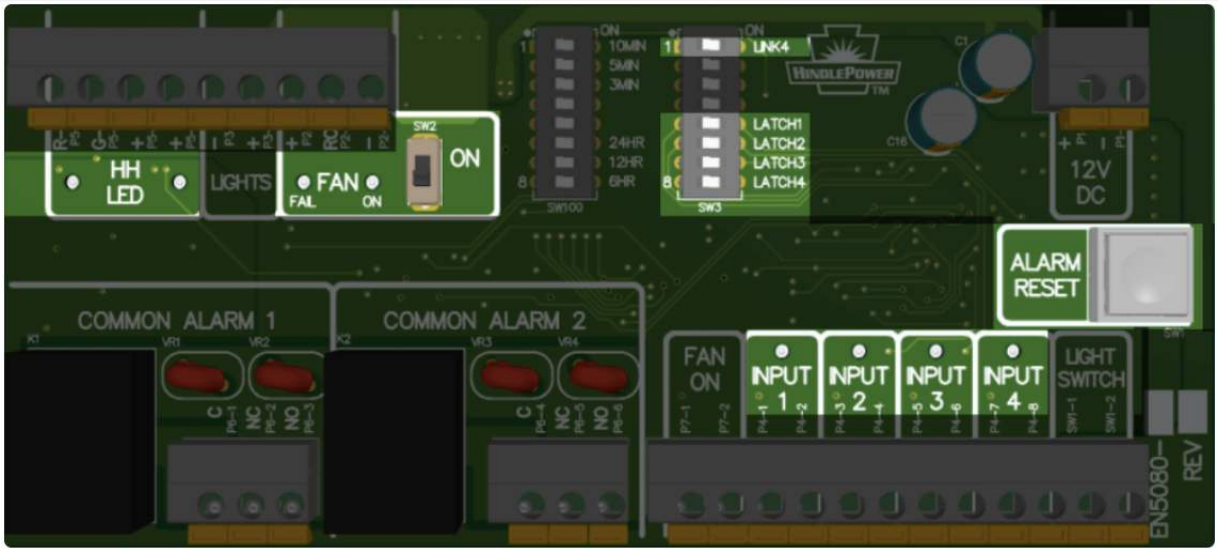


Figure 7 - User Interaction & Alarms on Control Board

The modified graphic of the control board in Figure 7 shows locations where alarms are indicated (by LEDs) or where alarms may be set, by switches, to latch or reset after latching. These are detailed in Table 4 on the following page.

Table 4: User Interaction & Alarms on Control Board

NAME	DESCRIPTION
HH LED	Hindle Health LEDs
	GREEN illuminates when no alarm condition is present.
	RED when alarm condition occurs for Inputs 1-4 or Fan Failure detect. This LED serves as a backup in situation where door LED does not function.
FAN	Fan power and Fan Failure detect circuit.
	Fail – Illuminates when Fan Failure detect circuit activates.
	ON – Illuminates when fan has power.
ON (SW2)	Switch used to test fan ON/OFF.
SW3	Switches mostly for latching alarms.
	LINK4 – When ON, links INPUT 4 to FAN so that fan runs when there is an alarm. Normally used for 1% hydrogen alarm.
	LATCH1 – When ON, latches alarm for Input 1.
	LATCH2 – When ON, latches alarm for Input 2.
	LATCH3 – When ON, latches alarm for Input 3.
	LATCH4 – When ON, latches alarm for Input 4
ALARM RESET	Resets all latched alarms.
INPUT 1	When LED is ON, indicates that Input 1 has active alarm.
INPUT 2	When LED is ON, indicates that Input 2 has active alarm.
INPUT 3	When LED is ON, indicates that Input 3 has active alarm.
INPUT 4	When LED is ON, indicates that Input 4 has active alarm.

4. Maintenance

4.1. Maintenance on Battery House

Recommended Annual Cleaning

Do not use liquid cleaners, aerosols, abrasive pads, scouring powders, or solvents such as benzene or alcohol.
Use soft cloth, lightly moistened with a mild detergent solution. Let surface dry fully before reconnecting power.
At least once a year, replace each door filter to ensure an adequate supply of cooling air. If Battery House is located in an extremely dusty environment, filter may need more frequent replacement.

In an extremely dusty environment (especially if airborne dust is conductive), carefully vacuum out the interior. Clean the surfaces of circuit boards, and clean around electrical terminals.

HVAC Unit

Reference manufacturer's manual for maintenance.

4.2. Maintenance on DC Equipment in Battery House

Remember to perform the maintenance that is recommended in the manual(s) for any batteries, battery chargers, or other DC distribution equipment that you are storing in the EPIC Series Battery House.

4.3. Ordering Replacement Parts

Every EPIC Series Battery House ships with a supplemental Parts Data Package Report, itemizing all components within the unit.

Contact your sales representative to place an order for spare or replacement parts.
Please provide the following information for each component:

- Model number and serial number of your EPIC Series Battery House (Section 2.2)
- Reference designator, factory part number and description
- Quantity required.

4.4. Troubleshooting Errors

For help in troubleshooting the causes of and resolving errors, please contact the factory at 610–330–9000.

5. Appendix – Document Control Information

5.1. Revision Numbers: Document and Page

The text and graphics contained within this manual are controlled by the manufacturer's internal part number (**JA5138-00**). The revision date of this manual's text and graphics is listed below. These controls supersede all other available dates. The first and last page of this manual are reserved for company-specific front and back cover artwork. Any revision levels, revision dates, or document numbers featured on the first two (2) and last two (2) pages of this manual refer to the cover artwork only.

DOCUMENT INFORMATION

Document No.: **JA5138-00**
Revision Level: **2025.06.19**
Filename: JA5138-00.RevB.docx
Last Saved: June 19, 2025 2:23:00 PM

5.2. Parts Data Package

A job-specific customized Parts Data Package report is supplied with every shipped EPIC Series Battery House. The data listed in this report supersedes any information featured in product literature, standard documentation, and/or quote documents. The parts and quantities listed are applicable only to the console featuring the same serial number listed on the Parts Data Package report.

5.3. Drawings

A customized record drawing package is available for any EPIC Series Battery House, featuring a unit-specific drawing list / data nameplate detail, outline drawing, itemized internal component layout, electrical schematic with component ratings, and a full connection diagram.

5.4. Online Availability of Related Information

Other related product documentation, in Adobe Acrobat Portable Document Format (PDF), is available for downloading and printing at https://hindlepowerinc.com/cabinets-trailers/battery-house/.

If revision levels differ between the drawings embedded in this manual and the full online PDF drawings, refer to document with the higher revision level.

6. Safety

! SAFETY INSTRUCTIONS – PLEASE READ AND FOLLOW TO AVOID SERIOUS INJURY OR DEATH!

6.1. Key to Safety Symbols

SYMBOL	MEANING
	Imminently hazardous situation, which if not avoided, WILL result in death or serious injury.
	Potentially hazardous situation, which if not avoided, could result in death or serious injury.
	Potentially hazardous situation, which if not avoided, could result in minor or moderate injury (e.g. minor burns, bruising from pinch points, minor chemical irritation). May also be used to alert against unsafe practices.
	Important information not related to personal injury (e.g. messages related to equipment or property damage).
	LOCKOUT TAGOUT is required before servicing.
	VENTILATION MANDATORY. Maintain at least 6in / 152mm of free air on all vented surfaces for cooling. Allow sufficient clearance to open front panel for servicing.
	Refer to manual.
	SAFETY ALERT. Indicates that a hazardous situation exists. TO REDUCE RISK OF INJURY OR DEATH, refer to accompanying documents, and follow all steps or procedures as instructed.
	DANGEROUS HIGH VOLTAGE inside product enclosure. TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, do not attempt to open enclosure or gain access to areas where you are not instructed to do so. SERVICING IS TO BE DONE ONLY BY QUALIFIED SERVICE PERSONNEL.

	Allow at least 3 minutes for internal components to discharge to a safe level after performing lockout tagout to prevent exposure to DANGEROUS HIGH VOLTAGE.
	DANGER! Risk of Arc Flash (only for ATevo units with input voltage over 416 Vac)
 	EXPLOSIVE GAS can be produced from batteries during normal operation. Never smoke, use an open flame, or create arcs in the vicinity of the ATevo or the battery.
	Do not operate equipment without all guards and/or covers in place.

6.2. Equipment Misuse Examples

SYMBOL	MEANING
	Do not use the equipment for any purpose not described in this manual.
	Do not operate this equipment from any power source that does not match voltage rating stamped on equipment. Refer to Manufacturer's Identification Label for operational requirements.
	Do not operate equipment without all guards and/or covers in place.

6.3. DANGERS



! Imminently hazardous situation, which if not avoided, WILL result in death or serious injury.

SYMBOL	MEANING
	Do not touch any uninsulated parts of the EPIC Series Battery House, especially the input and output connections, as there is the possibility of electrical shock.
	During normal operation, batteries may produce EXPLOSIVE GAS! Never smoke, use an open flame, or create arcs in the vicinity of the EPIC Series Battery House, or any batteries stored inside it.

6.4. WARNINGS



! Potentially hazardous situation, which if not avoided, could result in death or serious injury.

SYMBOL	MEANING
	Remove all jewelry, watches, rings, etc. before proceeding with installation or servicing to avoid electrical shock hazards.
	Do not operate the EPIC Series Battery House with any power source that does not match the specified AC and DC voltage ratings. Refer to the data nameplate decal affixed to the inside of the front door for operational requirements

	Do not operate the EPIC Series Battery House with any supplied guards removed or improperly installed.
	Do not install the EPIC Series Battery House in any environment for which it is not designed.
	Do not operate the EPIC Series Battery House if it has been damaged in any way. Refer to qualified service personnel.
	Before using the EPIC Series Battery House, read all instructions and cautionary markings on: a) this equipment, b) battery, and c) any other equipment to be used in conjunction with EPIC Series Battery House.
	Do not use the EPIC Series Battery House for ANY purpose not described in this manual.
	Disconnect upstream power source before connecting or disconnecting equipment, battery charger, batteries, etc. to prevent arcing, burning and/or equipment damage.
	De-energize and lock out all AC and DC power sources to the EPIC Series Battery House before servicing.
	Do not disassemble the EPIC Series Battery House. Only qualified service personnel should attempt repairs. Incorrect reassembly could result in explosion, electrical shock or fire.

6.5. CAUTIONS

⚠CAUTION

! Potentially hazardous situation, which if not avoided, could result in minor or moderate injury (e.g. minor burns, bruising from pinch points, minor chemical irritation). May also be used to alert against unsafe practices.

SYMBOL	MEANING
	Maintain at least 6in / 152mm of free air on all vented surfaces for cooling.
	Allow sufficient clearance to open the doors.
	This manual contains important safety and operating instructions and therefore should be stored for easy access.

7. Warranty

WARRANTY

EPIC BATTERY HOUSE WARRANTY

[applies only to product(s) delivered within United States and Canada]



Product Details:

Model:	EPIC BATTERY HOUSE
Factory Ordering Code:	
Serial Number:	
Date Shipped:	
Date Energized:	

☑ Standard Warranty

This product is warranted to be free from defects in material and workmanship for a period of five (5) years from date of manufacture.

During the term of the warranty period: parts, assemblies, or components deemed to be defective will be repaired or replaced at the manufacturer's option, free of charge. All costs related to removal, reinstallation and transportation will be paid by the purchaser/ customer and/or operator of the product. Evaluation, repair and/or replacement of any defective part(s) are FOB manufacturer's factory.

This warranty does not cover products or parts that are damaged from improper use or abuse, as determined by the manufacturer. Accessory items or additional items carry only their respective manufacturer's

warranty. Consumable items (such as fuses and electrolytic capacitors), which wear out under normal use are specifically not covered by this standard warranty. Any consequential damage due to diagnosis or repair by any party other than the manufacturer's authorized personnel is not covered under this warranty.

Extended Spare Parts Warranty

The manufacturer's extended warranty includes all items mentioned in the 'Standard Warranty' as previously listed, plus reasonable in/out freight costs related to a warranty claim for parts. Said freight cost is based on either standard UPS rates or common carrier only, as appropriate. Contact your sales representative for more information & pricing regarding the extended spare parts warranty.

Extended Warranty Term Options:
____ 1 additional year = 5% of the original purchase price
____ 3 additional years = 8% of the original purchase price
____ 5 additional years = 10% of the original purchase price

To elect an Extended Warranty as listed above:

1. Check off the desired extended warranty term option.
2. Calculate the price based on the above schedule and your original purchase price.
3. Fill in the missing information on both pages of this certificate.
4. Return a copy of both pages of this completed certificate with an appropriate purchase order to your place of purchase.
5. A confirmation of the extended warranty will be sent to you for display on the console with details regarding the extended warranty and claims for warranty consideration.

Requests for returns or warranty claims must be made via manufacturer's Return Material Authorization (RMA) instructions and assignment. Contact your sales representative for more information & pricing regarding returns or warranty claims. Returns that do not follow this procedure will not be honored.

Election to any of the above offered extended warranties must be done within the terms of the initial standard warranty.

Extended Warranty Purchase Details

PO # for Extended Warranty:	
Date:	
Contact:	
Phone:	
Fax:	