V 1.0

HV MANUAL

It is important that you read this manual before attempting the installation of your battery. Please take note of certain steps to ensure correct inverter compatibility.

Please visit https://www.hubblelithium.co.za for the latest version of this manual.

WARNING:
Working with high voltage systems is dangerous. Do not attempt to modify your inverter and battery setup unless you are certain you understand the risk. Speak to a qualified electrician if you are unsure.

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SECTION 1:
ABOUT THIS MANUAL

⚠ ***WARNING***

This product may only be installed by a qualified electrician.

Working with high voltage systems is dangerous. Do not attempt to modify your inverter and battery setup unless you are certain you understand the risk. Speak to a qualified electrician if you are unsure. It is important that you read this manual before attempting the installation of your battery.

ABBREVIATIONS & ACRONYMS	
AC	Alternating Current
BMS	Battery Management System
BMU	Battery Management Unit
CAN	Controller Area Network
DC	Direct Current
ESS	Energy Storage System
PE	Protective Earth
PV	Photo-Voltaic
LFP	Lithium iron phosphate batteries

QUALIFIED PERSONEL ONLY

The tasks and procedures described in this manual are intended for use by suitably trained and qualified personnel, such as electricians and/or installers who have all the following skills and experience:

- Knowledge of the local wiring and safety regulations.
- Knowledge of the functional principles and operation of on-grid and off-grid systems.
- Knowledge of the dangers and risks associated with installing and using electrical devices and acceptable mitigation methods.
- Knowledge of the installation of electrical devices.
- Knowledge of and adherence to this guide and all safety precautions and best practices.

Note!: Please visit https://www.hubblelithium.co.za for the latest version of this manual.

INTRODUCTION

The Hubble HV battery systems are compatible with most high voltage inverters and boasts an integrated intelligent touch screen.

FEATURES:

- The battery packs and the management unit slot into an enclosure similar to a rack-server cabinet.
- The modular nature of the unit allows for ease of transport and installation.
- Each of the battery modules have an internal fire suppression system.
- The BMU can connect via CAN bus to approved inverters.
- Monitoring is provided by the Hubble Cloudlink integrated within the BMU.

HV-204 BATTERY SYSTEM:

The nominal voltage of the HV-204 battery system is 204V DC with a capacity of 20.4 kWh at a peak discharge rate of 1C or 100amp. This is achieved by connecting 4 battery packs in series with a single BMU. Each pack consists of 16 x LFP cells and a BMS.

HV-410 BATTERY SYSTEM:

The nominal voltage of the HV-410 battery system is 410V DC with a capacity of 41 kWh at a peak discharge rate of 1C or 100amp. This is achieved by connecting 8 battery packs in series with a single BMU. Each pack consists of 16 x LFP cells and a BMS.

HV-512 BATTERY SYSTEM:

The nominal voltage of the HV-512 battery system is 512V DC with a capacity of 51.2 kWh at a peak discharge rate of 1C or 100amp. This is achieved by connecting 10 battery packs in series with a single BMU. Each pack consists of 16 x LFP cells and a BMS.

HV-CUSTOMISED:

Any number of 16cell packs can be connected in series up to a maximum of 10 packs for a maximum, nominal voltage of 512 Vdc.

⚠ ***WARNING***

It is imperative that only suitably qualified personnel commission the high voltage batteries and that one does not accidentally touch or short out the battery terminals. For further guidelines please refer to the "Safety" section of this document.

INTENDED USE

The high voltage range of lithium batteries are designed to provide electrical power to devices or systems that require higher voltage levels than what can be provided by the standard low voltage batteries.

Hubble lithium HV systems are commonly used to provide reliable and efficient power to devices in applications that require large amounts of scalable storage, such as uninterruptible power supply systems (UPS) and renewable energy storage systems, while also ensuring safety and long-term durability.

Because of the modular construction of the HV systems it is easy to build the HV battery systems on site without the need for forklifts or gantries. The intended use is for HV systems of up to 1.5 MWh, larger storage systems are possible but need special considerations. Please contact a Hubble lithium sales presentive for more details.

Refer to the list of supported inverters provided in this document to learn more about the integration possibilities.

SAFETY

INTRODUCTION

Working with high voltage DC batteries can be dangerous if proper safety precautions and procedures are not followed. Here are some general guidelines to follow:

1. Wear protective gear: When working with high voltage batteries, it is essential to wear personal protective equipment such as insulated gloves, safety glasses, and protective clothing and safety boots with insulated soles.

2. Use insulated tools: Always use insulated tools designed for high voltage work. Ordinary metal tools can conduct electricity and cause electrical shock.

3. Isolate the battery: Before working on the HV battery system, isolate the batteries from all power sources (refer to the battery overview)

4. Never touch exposed terminals or even communication wires.

5. PE: Make sure that protective earth connections are in place.

6. Observe correct polarity: Ensure that the battery is connected with the correct polarity. Reversing the polarity can damage the battery, BMS, BMU and inverter.

7. Handle with care: High voltage batteries are heavy and require proper lifting techniques. Ensure that the battery is lifted and carried with care to prevent physical injury.

8. Be prepared for emergencies: Incase of a short circuit or a electrical fault, have a first aid kit and fire extinguisher at hand.

9. Do not install the battery pack where flammable materials are stored or where explosive gas or chemicals are present.

10. Do not expose the battery to open flame.

11. Do not place the battery near highly flammable materials. It may lead to fire or explosion in the case of an accident.

12. Do not expose or place near water sources like downspouts or sprinklers.

13. The battery must be installed indoors in a cool, dry, clean, and well-ventilated place.

14. The battery must be installed in such a way so that it is out of reach of children and animals.

15. Do not connect AC conductors or PV conductors directly to the battery. The battery pack should only connect to a suitably rated inverter.

16. Do not connect the power cables with reverse polarity.

17. Do not charge or discharge a damaged battery.

STANDARDS:

- ESD: Complies with Level 4 of GB/T 17626.2-2006 (EN55024): 8 kV at contact and 15 kV at air. Normal operation after test.
- ELECTROMAGNETIC CONDUCTION: Complies with Level A of YD/T 983-1998 (EN55022).
- ELECTROMAGNETIC RADIATION: Complies with Level A of YD/T 983-1998 (EN55022).
- INRUSH: Complies with GB/T 17626.5-2008 (EN6100-4-2).

STORAGE

By following proper transportation and storage procedures, you can ensure the safe and reliable operation of your battery.

1. Store in a cool, dry place: Hubble lithium HV batteries should be stored in a cool, dry place to prevent degradation and ensure optimal performance. Avoid storing the battery in direct sunlight or areas with high humidity.

2. Charge before and during storage: If the battery is not in use for an extended period, ensure that it is charged before storage. This prevents self-discharge and maintains the battery's capacity. The battery should be put into storge with a SOC of around 75% and recharged before the battery SOC reaches 25% or at least be recharged every 6 monthes.

3. Disconnect the battery: If the battery will not be used for an extended period, disconnect it from the inverter to prevent any drain on the battery.

4. Inspect regularly: Regularly inspect the battery for signs of damage or corrosion.

TRANSPORTATION

When transporting and storing, it is important to follow proper safety procedures to prevent accidents and ensure the longevity of the battery. Here are some general guidelines to follow:

1. Follow applicable regulations: LFP batteries may be subject to transportation regulations and fall under the category of dangerous goods. Ensure that you are familiar with and follow all applicable regulations.

2. Secure the battery: Ensure that the battery is securely mounted and cannot shift during transport. Use straps or other methods to prevent movement.

3. Protect from physical damage: The battery should be protected from physical damage during transport. Use cushioning or other protective materials to prevent impacts.

TRANSPORTATION – DANGEROUS GOODS:

In South Africa, the transportation of dangerous goods, including lithium batteries such as LFP, is regulated by the National Regulator for Compulsory Specifications (NRCS) under the Hazardous Substances Act. To transport dangerous goods, including lithium batteries, the following documentation is required:

1. A valid transport permit: A transport permit is required for the transportation of dangerous goods. The permit must be obtained from the NRCS and must be carried by the driver or person responsible for the transport of the goods.

2. A safety data sheet (SDS): The SDS is a document that contains information on the physical and chemical properties of the dangerous goods, as well as safety precautions and emergency procedures. The SDS must be carried by the driver or person responsible for the transport of the goods.

3. Proper labeling and packaging: Dangerous goods must be properly labeled and packaged in accordance with the regulations. The packaging must be designed to prevent leaks or spills and must be approved for the transportation of dangerous goods.

4. A transport emergency card: A transport emergency card must be carried by the driver or person responsible for the transport of the goods. The card contains information on the dangerous goods being transported and emergency procedures in the event of an accident or spill.

5. Additional documentation: Depending on the type and quantity of the dangerous goods being transported, additional documentation may be required, such as a consignment note, a hazardous waste manifest, or a certificate of origin.

It is important to note that the requirements for transporting dangerous goods, including lithium batteries, may vary depending on the mode of transport (e.g., road, air, sea) and the destination country. It is essential to consult the relevant regulations and guidelines to ensure that all necessary documentation is obtained and all safety procedures are followed.

Hubble Lithium HV batteries have been packed in suitable and approved packing materials and have been certified to meet the regulations and specifications set out by **UN38.3** that govern the safe transport of lithium batteries.

EMERGENCY SITUATIONS

CHEMICAL EXPOSURE

If a person is exposed to internal materials of the battery cell due to damage on the outer casing, the following actions are recommended:

- Inhalation – Leave the contaminated area immediately and seek medical attention.
- Eye contact – Rinse eyes with running water for 15 minutes and seek medical attention.
- Contact with skin – Wash the affected area thoroughly with water and soap, and seek medical attention.
- Ingestion – Induce vomiting and seek medical attention.

FIRE EMERGENCY

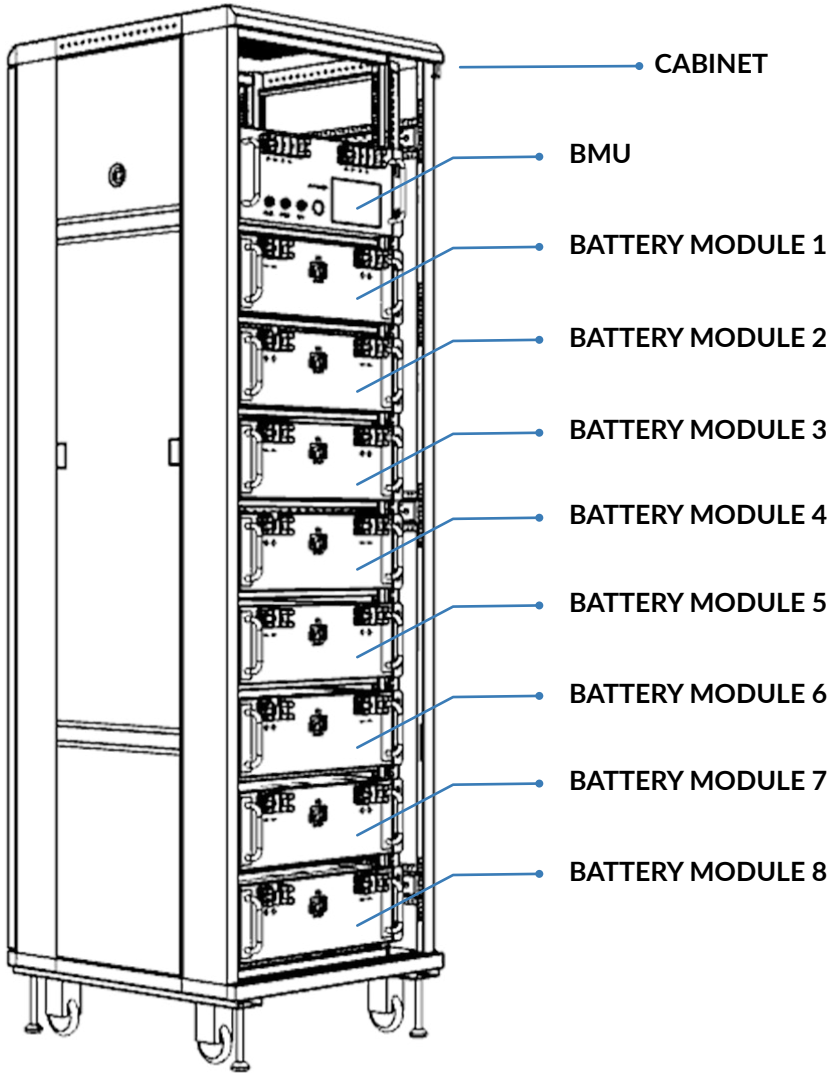
- If a fire occurs, power off the system if it is safe to do so.
- Extinguish the fire with carbon dioxide, FM-200 or ABC dry powder fire extinguishers.
- Ask firefighters to avoid contact with high-voltage components during fire fighting to prevent risk of electric shock.
- Overheating may cause batteries to deform and leak corrosive electrolyte. Keep away from the batteries to avoid skin irritation and chemical burns.

SUPPORTED INVERTERS

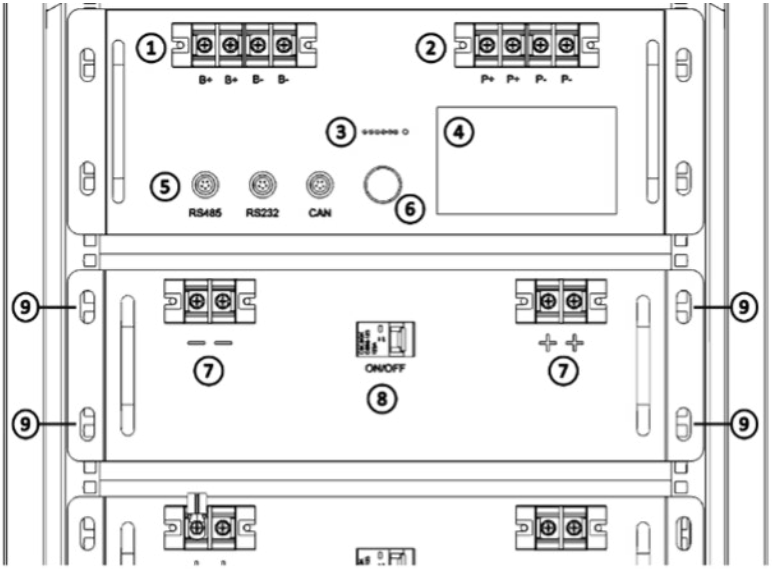
INVERTER	CAN BUS	HV-410	HV-512
ATESS	YES	YES	YES
Deye 50KW	YES	YES	YES
Sunsynk 50KW	YES	YES	YES
Voltronic	NO	YES	NO
Blue Mountain	NO	YES	NO

SECTION 2:
SYSTEM OVERVIEW

The diagram below is an example of an 8 battery pack system and is subject to change without prior notification.



MODULES WITH STANDARD BMU



1. DC Terminals to connect the BMU to the Battery Pack
2. DC Terminals to connect the Battery Pack to the Inverter
3. Status LEDs
4. Touch Screen Display
5. Communication Ports
6. BMU On/Off button
7. Battery Module Terminals
   Please note: odd and even modules have their terminals on opposite sides!
8. Module On/Off switch
9. Slots for securing modules to the cabinet

INSTALLATION

REQUIRED TOOLS

- A digital multi-meter rated for 100 Vdc
- A torque socket wrench set
- An electrician's star-screwdriver set
- A cable lug crimping tool, and optionally
- A heat gun (for heat-shrink)
- Personal Protective Equipment, refer to the safety section of this document.

MECHANICAL

LOCATION AND ACCESSIBILITY

The battery must be installed indoors in a cool, dry, clean, and well-ventilated place. The battery must be installed in such a way so that it is out of reach of children and animals.

The Hubble lithium HV battery system is a floor standing unit. It must be installed on a level surface. The floor and surface must be able to support the unit's weight. Once assembled, the battery pack could weigh more than 600 kg and has a footprint of 693 x 1102 mm. *refer to the specification sheet for the selected unit.

The battery system must be installed such that in the case of an emergency the touch screen display, the on-off switch and the individual battery module switches are accessible on the BMU. On some versions of the battery modules, the battery comms link boards are located at the back of the unit. If installing one of these units, the battery needs to be installed in such a way as to also allow access to the back of the unit (at least during installation and maintenance).

PRE-ASSEMBLY CHECKS

When unpacking the battery modules and BMU, inspect them for any damage that might have occurred during transport. Confirm that the DC switch is in the open position. Use your multimeter to confirm that there is no output voltage on the battery terminals. If any damage is found or if there is voltage on the terminals with the DC switch in the open position, do not install the module, rather contact your dealer as soon as possible.

ASSEMBLY

The Hubble Lithium HV battery system is a modular system that can be assembled by a single qualified person and an assistant.

> ⚠ ***CAUTION***
>
> ***Each of the battery modules weights approx. 45 kg, so care must be taken while unpacking it and assembling it into the cabinet.***

The battery modules are numbered 1 through 4 (HV-204) / 8 (HV-410) / 10 (HV-512). The modules must be installed in sequence so that the module with the highest number is at the bottom and module labeled number 1 is at the top. The BMU module will be installed in the slot above battery module labeled number 1.

To assemble the battery pack follow the steps below:

1. Position the cabinet in the chosen location.
2. Carefully unpack the battery modules starting with the highest number.
3. Confirm that the battery DC switch is in the off position and that there is no voltage measured across the battery terminals.
4. Carefully slide the module into the lowest rack of the cabinet.
5. Secure the module in place with the four screws provided.
6. Repeat the steps above for all the battery modules, with each new module mounted in the rack above the last module.
7. Install the BMU in the rack above battery module 1 and secure it to the cabinet using the four screws provided.

BATTERY COMMUNICATION LINK CONNECTIONS

The BMU communicates to each of the battery modules over a communication bus, with cables daisy chained from one unit to the next. The communication link cables are provided with the battery.

On the original set of HV batteries these link cables are wired in from the back of the unit. To access each battery modules' communication board's connectors one has to first remove its protective cover.

Please Note: On newer hardware versions, the link cables will be wired in from the front of the unit, and there are no protective covers that need to be removed.

NB: The placement of the communication link cables matters.

Starting with the link cable coming from the BMU, push the connector into the bottom header of the battery module number 1's communication board. Then link the top header of Battery Module 1 to the bottom header of the battery module 2. Continue with this pattern to link the remaining battery modules. Note, with the wiring done correctly, the top header of the bottom battery module will be left empty.

The communication boards have a DIP switch on them. The switches on each of these must be left in the off position (already addressed at the factory).

EARTHING POINT

Each battery cabinet used must be connected to the protective earth (PE) conductor. Before starting the power cabling, connect the cabinet to PE using the PE mounting point of the cabinet.

BATTERY MODULES DC CONNECTIONS

Once the battery pack is fully assembled and the module communication link cables are installed, proceed with the DC connections:

1. Make sure that the DC switch for all the battery modules is turned off.

2. Connect the battery modules in SERIES. Note: the polarity of the DC terminals on each of the battery modules before installing the cable.

    The battery modules must be connected in series using the provided cables, these are the short link cables that are sized to fit neatly between two adjacent modules.

    Connect the B- terminal of the BMU to the negative terminal of battery module

    Connect the positive terminal of each battery module to the negative terminal of the battery module directly below it.

    Connect the postive terminal of the last battery to the B+ terminal on the BMU.

3. The other set of power terminals on the BMU are labelled P+ and P-. These will be connected the positive and negative DC terminals of the inverter, respectively.

   Both the positive and negative output from the HV battery system must be connected to the inverter, either through a fused disconnect switch or a DC circuit breaker, preferably located close to the battery cabinet.

   NB - During installation and commissioning of the HV battery system, ensure that the fused disconnect switch or circuit breaker is kept in the open / disconnected position. This will prevent unintentional powering up of the inverter by the battery system and prevent the inverter from unintentionally energizing the battery system.

DC ISOLATOR

Internally, each HV battery has an electronic circuit breaker built into its battery management system to protect the battery cells against unsafe current, voltage and temperature levels...etc. It is however required to install an external DC fuse or circuit breaker before using or operating the batteries. Please ensure you use the correct rating as per battery specification.

CABLE REQUIREMENTS

THE INSTALLER WILL NEED TO PROVIDE:

- Appropriately sized DC cables to link the DC port of the inverter and the power terminals of the BMU.

  The minimum recommended cable size is 25mm2.
  The diameter may need to be increased for long DC cable runs.
  The diameter may need to be increased, to comply with the local wiring guide for minimum conductor sizes. Using undersized wires is a fire hazard.

- DC cables with isolation rated for at least 1000 Vdc.
- Cable lugs (Lug hole size required for connecting to the BMU is 6 mm. Lug hole size for connecting to the inverter may vary depending on the type of inverter.)
- Heat shrink (optional)
- Fuse holders (Rated for at least 125 A and a suitable DC voltage rating)
- Fuses (Rated for at least 125 A and a suitable DC voltage rating)

SECTION 3:

COMMUNICATION INTERFACES

CAN BUS COMMUNICATION PORT

The inverter receives appropriate operation parameters from the BMS via the CAN bus.
Add can bus pinout and cable diagram

Looking into the connector, going Clockwise pin 1 is closest to the locating notch.

CAN LO PIN 1

CAN HI PIN 2

RS485 COMMUNICATION PORT

The RS485 interface is used only for performing firmware updates directly tor the BMS. This port cannot be used for any inverter communications.

RS232 COMMUNICATION PORT

The RS232 interface is used to connect to either the Hubble Cloudlink device or for technical support to interface directly through a service laptop and access the BMS directly for programming and troubleshooting.

WARNING

⚠

WARRANTY VOID: DO NOT CONNECT THIRD PARTY DEVICE

It is strictly forbidden to access or interfere directly with the battery BMS through third party devices such as monitoring devices or logging devices that are not Hubble Lithium products. Third party monitoring and interfacing devices have the potential to change charge voltages and algorithms inadvertently - this can cause a catastrophic failure. Therefore, interfacing to the BMS directly without authorization will void the warranty and Hubble Lithium will not be liable for any resulting damages.

SEE CLOUDLINK SET-UP GUIDE FOR 24/7 REMOTE MONITORING CONFIGURATION

SECTION 4:
COMMISSIONING

Note when the batteries are turned on, the voltage at the battery and power terminals of the BMU is potentially lethal. It is imperative that only suitably qualified personnel commission the high voltage batteries and care should be taken not to accidentally touch or short out these terminals.

MECHANICAL INSPECTION

- Confirm that the battery pack has not been mechanically damaged.
- Confirm that the battery is clean and that all tools have been removed.
- Confirm that the area around the battery is clean, dry and that there are no risk of slipping.
- Confirm that all tools have been removed both from inside the battery cabinets and the surrounding area.

ELECTRICAL INSPECTION

- Confirm that all insulators and covers have been replaced.
- Confirm that the site protective earth meets the minimum regulated standards.
- Confirm that the modules were wired according to the wiring instructions provided in this document.

TURNING ON FOR THE FIRST TIME

Before turning on for the first time, double check that all the wiring for the battery bank is done and that it is correct. Check that:

- All the batteries are turned off.
- The batteries modules are wired up in series, i.e. the negative terminal of one battery is connected to the positive terminal of the next battery in the string.
- The negative terminal of battery module 1 (which is one shelf beneath the BMU) is connected to the BMU's "B-" terminal.
- The positive terminal of the bottom battery module (which will be battery module 8 or battery module 10) is connected to the BMU's "B+" terminal.
- All the screws connecting cables to terminals are screwed in tightly.

Turn on the batteries one at a time by turning on the battery switch starting with battery module 1. After turning on each battery, confirm with a multimeter that the voltage between the "B-" terminal of the BMU and the positive terminal of the battery reads the expected value (as each battery is turned on the total voltage should increase by approximately 50 V). If the total voltage measured does not correspond to the number of batteries that are turned on, then turn off all batteries, and double check your connections.

Once all the battery modules have been turned on, the voltage across the battery terminals (B+ and B-) of the BMU should match the total string voltage. To turn on the BMU, press and hold the round push button switch. While holding the switch down, the switch should light up. Keep

pressing the button until the LCD powers up and shows a logo or text. You will hear a contactor inside the BMU close, and the “P” terminals of the BMU will now be energized.

CHECK THE BMU HAS COMMS TO THE MODULES

The LCD can be used to confirm that the BMU is successfully communicating with all the battery modules.

Using the information displayed on the home screen confirm that:

- The pack voltage (pkVolt) is approximately 51 V multiplied by the number of battery modules installed (e.g. ~410 V or ~510V) and the temperature information (Temperature).
- The pack current (pkCurr) should be 0 Amps and the temperature information (Temperature).
- The state of health (SoH) should be 100% and the temperature information (Temperature).
- Because the batteries are not shipped fully charged, the state of charge (SoC) would not be at 100% and the temperature information (Temperature).
- The minimum and maximum cell voltages is similar and around 3200 mV and the temperature information (Temperature).
- The minimum and maximum temperature readings is close to the ambient temperature and the temperature information (Temperature).
- There are no active alarms, faults or protection events and the temperature information (Temperature).

On the Voltage Information (VoltInfo) and the temperature information (Temperature) screens:

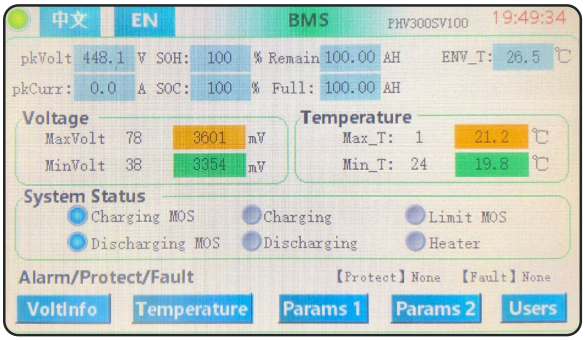
- Confirm that all cells are reporting reasonable values (i.e. ~3200 mV).

  On a HV-204 there must be values for 64 cells.
  On a HV-410 there must be values for 128 cells.
  On a HV-51 there must be values for 160 cells.

- Confirm that all modules are reporting temperature readings that are close to the ambient temperature.

  On a HV-204 there must be 16 reported temperatures.
  On a HV-410 there must be 32 reported temperatures.
  On a HV-512 there must be 40 reported temperatures.

- If the number of cell value measurements or temperature readings reported does not match what is expected, turn off the BMU, then turn off all batteries, and then double check all the communication wiring.



If all these checks have passed the inverter can be commissioned. Before energizing the inverter from the battery, turn off the BMU, by pressing the round push button until it's LED ring starts to flash, then turn off all the battery modules. Then with the inverter still isolated from mains and solar, i.e. with the inverter totally unergized, close the isolating device between the battery and the inverter. After all the required communication cables between the inverter and BMU is installed, turn on all the battery modules and the BMU.

INVERTER COMMISSIONING

The setup and startup procedure for the inverter must be done according to the inverter's manual. Here are some simple guidelines.

ELECTRICAL

With the battery turned off, connect the inverter to the DC output of the BMU

COMMUNICATION

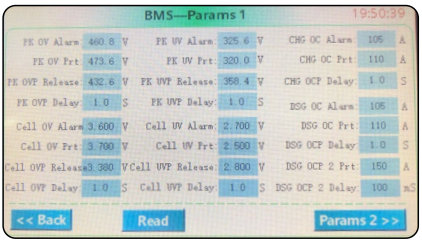
The inverter receives appropriate operation parameters from the BMS via the CAN bus.

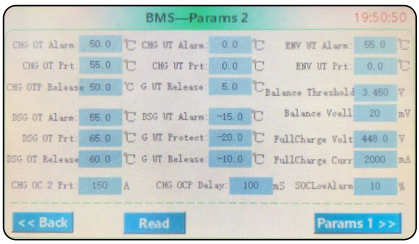
The BMU can send charge limits and battery information to the inverter over a CAN bus. The CAN signals must be connected with twisted pair cable. The CAN-Hi signal of the battery must be wired to the BMS CAN-Hi of the inverter. Similarly, the CAN-Low signals must also be connected. If a CAN ground signal is provided on the inverter then this should be connected to the CAN ground signal of the BMU.

FALLBACK CHARGE VALUES

Typically, the BMU will send charge and discharge limits to the inverter. However, it is still advisable to setup fallback values on the inverter. The relevant charge and discharge limits of the battery can be found on the parameter screens of the battery's LCD.

- The charge voltage limit of the inverter should be set to the Full Charge Voltage (which is shown on BMS-Params 2).
- The disconnect voltage of the inverter should be set to the Pack Under Voltage Alarm (Pack UV Alarm, shown on BMS-Params 1).





START-UP PROCEDURE

1. Start up the battery according to the start up procedure.
2. Follow the startup procedures of the inverter.
3. Switch on the HV ESS by holding in the power button for 5 seconds.
4. Check display for any errors or warning.

SECTION 5:

LCD DISPLAY

ABBREVIATIONS USED ON DISPLAY	
AC	Alternating Current
BMS	Battery Management System
EN	English
pkVolt	Pack Voltage
pkCurrent	Pack Current
SoH	Battery State of Health
SoC	Battery State of Charge
Remain	Remaining Capacity
Full	Full Capacity
ENV_T	Environment (Ambient) Temperature
MaxVolt	Maximum Cell Voltage
MinVolt	Minimum Cell Voltage
Max_T	Maximum Cell Temperature
Min_T	Minimum Cell Temperature
MOS	Metal-Oxide-Semiconductor
Limit MOS	Charge Limiter MOS
Params	Parameters

SECTION 6:

BMU LOW POWER MODE

The BMU will enter low power mode if the following conditions happen:

1. An over-discharge protection has occurred. (30 seconds later).
2. A cell-voltage is less than the sleep voltage parameter setting (to prevent complete cell/battery drain).
3. Standby time is more than 24 hours (without charge and discharge current, without balance, cell/battery without protection and fault).

SECTION 7:

MAINTENANCE

The Hubble BMU will protect the battery and lifespan of your battery as best possible. However, it must be noted that proper operation of the battery is recommended, and maintenance functions should be taken to ensure the maximum life of your batteries.

Cell balancing is a very important function of the lifespan of your battery. It is important to ensure the cell balancing functions are properly performed. The Hubble BMU cell balancer will activate when the batteries near full charge. Thus, it is critical that a full charge to the batteries are approached at least once every five days, but preferably daily with every charge cycle. Enough charge time should be provided to balance the cells until the BMU completely stops taking charge from the inverter. It is especially important in complete off grid systems where a stable power supply is not available that the PV is sized correctly and that the inverter settings allow for the battery to reach full capacity at least once a week.

CONGRATULATIONS!

Once all the above steps have been completed your High Voltage System will be ready to use!

If you have any difficulties with setting up your system, please contact our Technical Support Department via support@hubblelithium.co.za. Be sure to include the following information in your initial email so that we can provide you with timely assistance:

1. Inverter make and model
2. Model and number of connected batteries
3. Are your batteries in series or parallel?
4. A brief description of your system and any issues you may be having
5. If possible; images of your power system
6. Contact details, if we should need to contact you