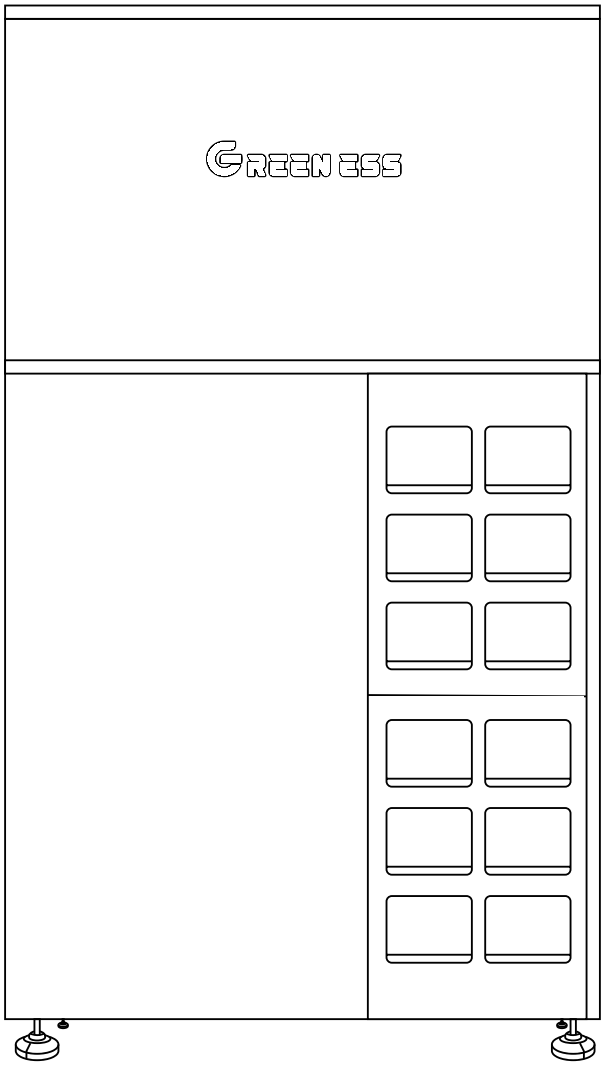
GreenVolt Energy Storage System

INSTALLATION, OPERATION &
MAINTENACE Manual
Model: Greenvolt-BS5B/HS5B



GREEN ESS™

Disclaimer

Please read this Manual and ensure you understand it fully before using the product. Please keep this Manual properly for future reference. Any incorrect usage of this product may cause severe injury to the user or others, damage to the product, or loss of property. By using this product, the user will be deemed as having understood, recognized, and accepted all the terms and contents of this User Manual, and will be responsible for any incorrect usage and all consequences a rising therefrom. GreenEss hereby disclaims any liability for any losses due to the user's failure to use the product according to the User Manual.

In compliance with laws and regulations, GreenEss shall have the final right to interpret this document and all related documents for this product. Any update, revision, or termination of the contents thereof, if necessary, the product.

Catalog

01 Safety Instructions

01-1 Warning

I. It is strictly prohibited to place this battery near heat sources, such as fire or heating furnace.
II. It is strictly prohibited to allow this battery to contact with any liquid. Do not immerse this battery in water. Do not use this battery in rainy, damp, or wet environment.
III. It is prohibited to use this battery in strong static or strong magnetic field environme
IV. nt.
It is prohibited to disassemble this battery in any way or puncture this battery
V. with sharp objects.
It is prohibited to connect the positive and negative terminals of the battery directly
VI. with wires or any metal objects.
VII. It is prohibited to dismantle or replace the battery cells.
VIII. It is prohibited to stack heavy objects on top of this battery.
It is prohibited to place this battery in an unventilated or dusty environment.

01-2 Caution in general

I. Please visit authorized GreenEss channels for official components and accessories information.
II. If the battery is compromised or battery cells are exposed, do not attempt to repair it yourself. Please have it inspected and repaired by GreenEss technician or authorized technician.
III. In case of accidental leakage of chemicals inside this battery, do not touch or inhale. In case of accidental contact with skin or eyes, wash with plenty of clean water and seek medical treatment immediately.
IV. Do not operate this battery while wearing metal objects such as watch, necklace, and bracelet to avoid causing accidental short circuits. If this battery catches fire, immediately use fire extinguisher or fire fight- ing equipment water or mist, sand, fire blanket, dry powder fire extinguisher, carbon dioxide fire extin- guisher.
V. When using this battery for the first time , if the battery appears broken or has abnormal smell, do not continue to use this battery and return it to sellers.
VI. If this battery accidentally falls into water during use, place it in a safe, open area and stay away from this battery until it is completely dry, and this battery should not be reused and should be disposed properly in accordance with the disposal methods in Section 8.2 of this User Manual.

VII. If the battery charging exceeds regular charging time, charging should be stopped. Overcharge may cause the battery to overheat, to smoke and deform, or to combust.
VIII. This battery should be kept out of the reach of children and pets.

01-3 Caution while handling

I. When handling this battery, use the non-slip metal handles from this battery for proper handling.
II. When handling this battery, be sure to secure it properly and keep it in a flat position.
III. Please handle with care.

01-4 Safety Instructions

The following symbols with important information for safety use.

DANGER

"Danger" indicates a hazardous situation which if not avoided , will result in death or serious injury.

WARNING

"Warning" indicates a hazardous situation which if not avoided , could result in death or serious injury.

WARNING
Risk of fire

Despite careful construction , electrical devices can cause fires .
Do not install the inverter in areas containing highly flammable materials or gases .
Do not install the inverter in potentially explosive atmospheres .

WARNING

Risk of electric shock.

CAUTION

"Caution" indicates a hazardous situation which if not avoided , could result in minor or moderate injury.

NOTE

"Note" provides tips that are valuable for the optimal operation of your product .

01-5 General Safety

DANGER

GreenVolt products are equipped with batteries that are heavy! Use of lifting equipment is recommended. Do not stack the unpacked products to avoid the irreversible damage.
It is prohibited to touch the internal components of GreenVolt when it's running. Ensure that the power switch and the breaker of GreenVolt are always off prior to all installation, replacement, and maintenance processes.
Do not attempt to open, disassemble, tamper with, or modify GreenVolt.
Do not squeeze, impact or puncture the battery, to avoid unnecessary damage and loss.
Do not operate GreenVolt outside of the specified conditions and requirements, or stand, lean on, or sit on the product.
Do not place the GreenVolt or its components in water or other liquids or expose GreenVolt to flammable gases or other corrosive substances.

WARNING

Do not remove cover. There is no user serviceable parts inside, refer servicing to qualified and accredited service technicians .
The PV array supplies a DC voltage when they are exposed to sunlight .
Risk of electric shock from energy stored in capacitors of the Inverter, do not remove cover for 5 minutes after disconnecting all power sources (service technician only) . Warranty may be voided if the cover is removed without authorization .
Do not touch any inner live parts until 5 minutes after disconnection from the utility grid and the PV input.
Electrical installations must be done in accordance with the local and national electrical safety standards .
Operations must be accomplished by licensed technician or authorized person .
Operator must put on the technicians' gloves during the whole process in case of any electrical hazards.

NOTE

NOTE: PV module used with inverter must have an IEC 61730 Class A rating .
The inverter has been constructed according to the applicable safety and technical guidelines. Use the inverter in installations that meet the following specifications ONLY:
1 . Permanent installation is required .
2 . The electrical installation must meet all the applicable regulations and standards .
3 . The inverter must be installed according to the instructions stated in this manual .
4 . The inverter must be installed according to the correct technical specifications .

NOTE

This product shall not be disposed of with household waste.
They should be segregated and brought to an appropriate collection point to enable recycling and avoid potential impacts on the environment and human health.
Local rules in waste management shall be respected .

02 Privacy Policy

02-1 Note

By using GreenEss Products, Applications and Services, you consent to the GreenEss Term

02-2 Privacy Policy

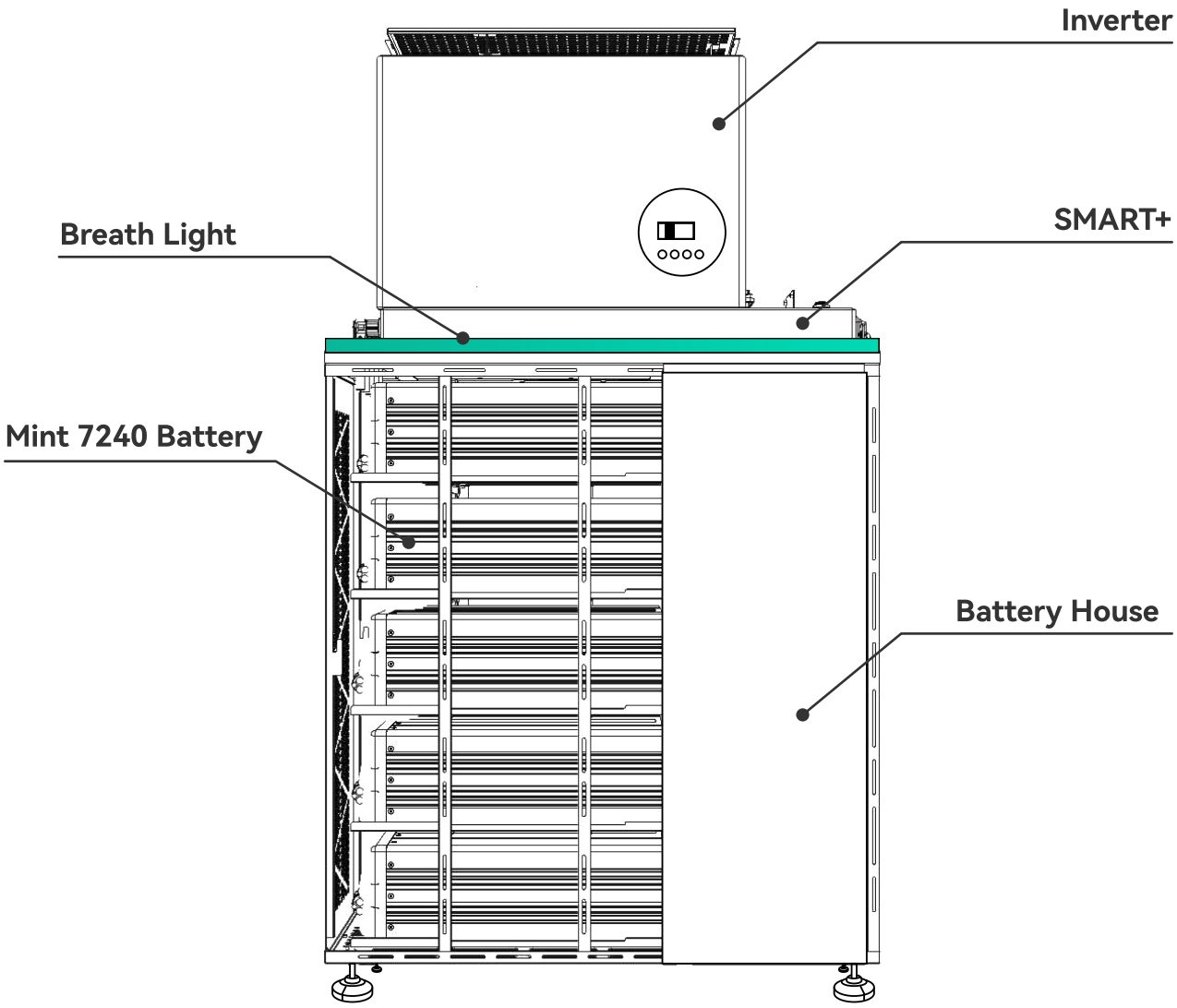
You can access via the “Privacy Policy” page on the FreenEss official website.

02-3 App

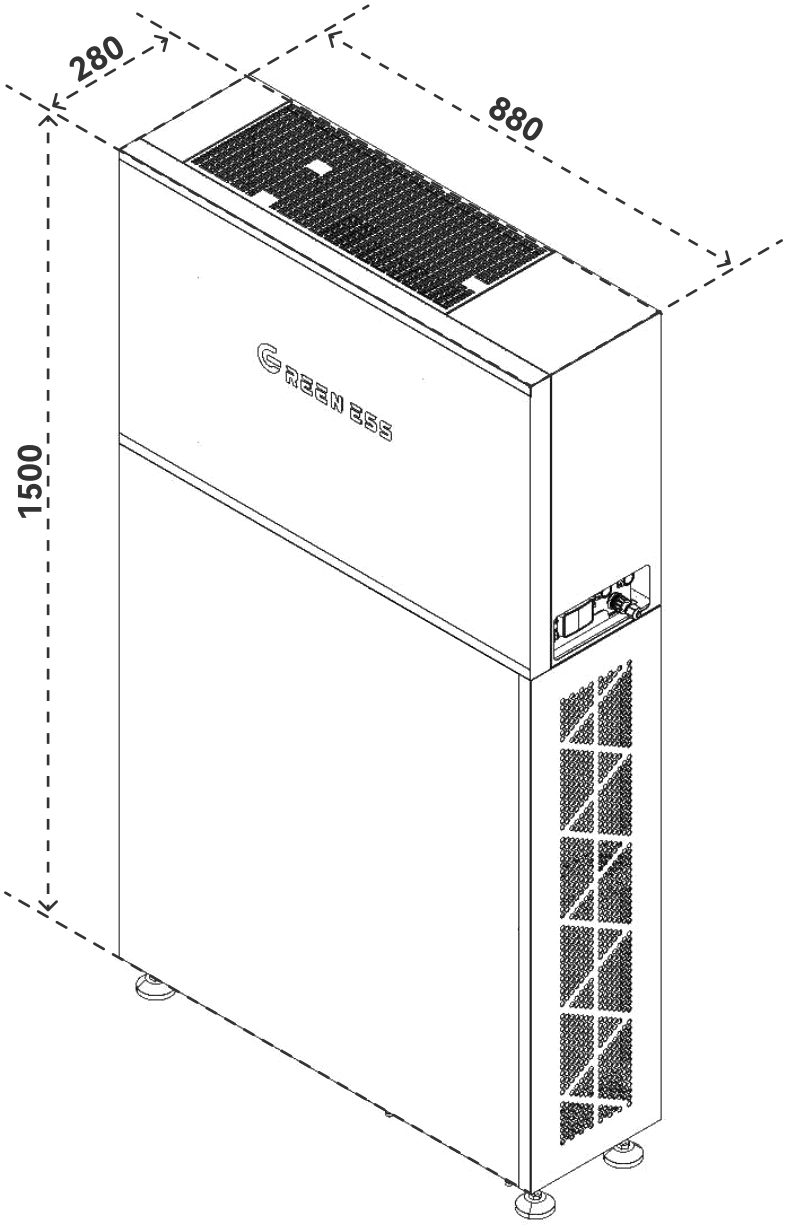
Refer to the GreenEss official website. www.greeness.com.au

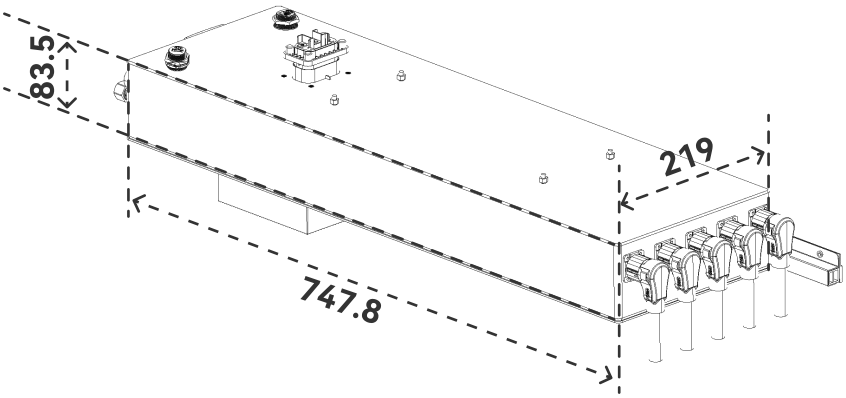
03 System introduction

03-1 Components Overview



03-2 Dimensions





SMART+

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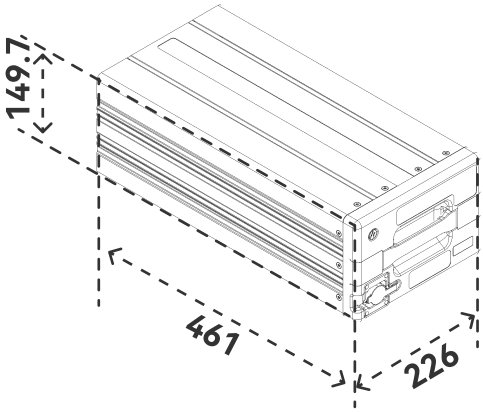

Mint 7240 Battery

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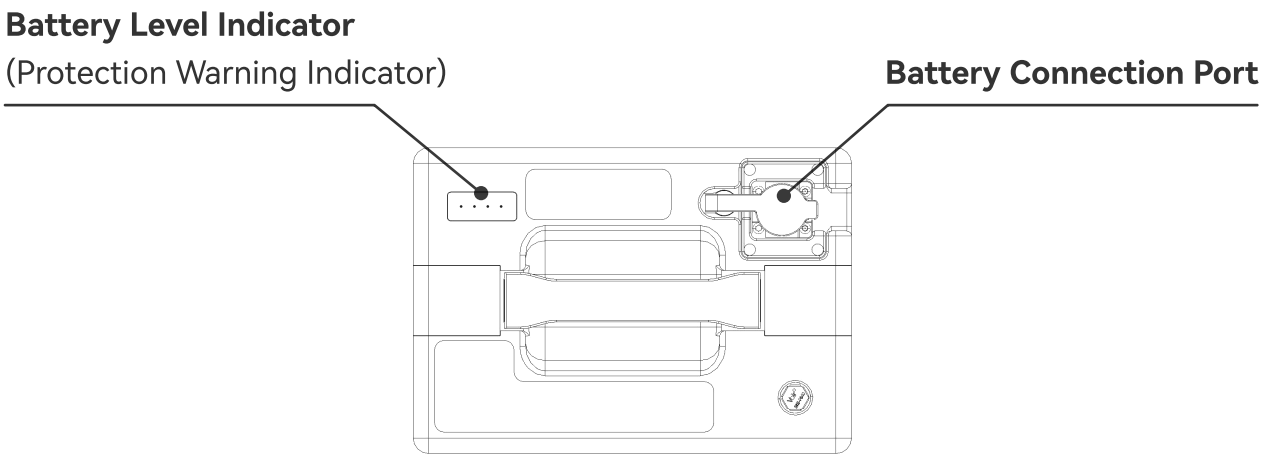
03-3 Mint 7240S Battery Electrical Interface



Mint 7240S Battery

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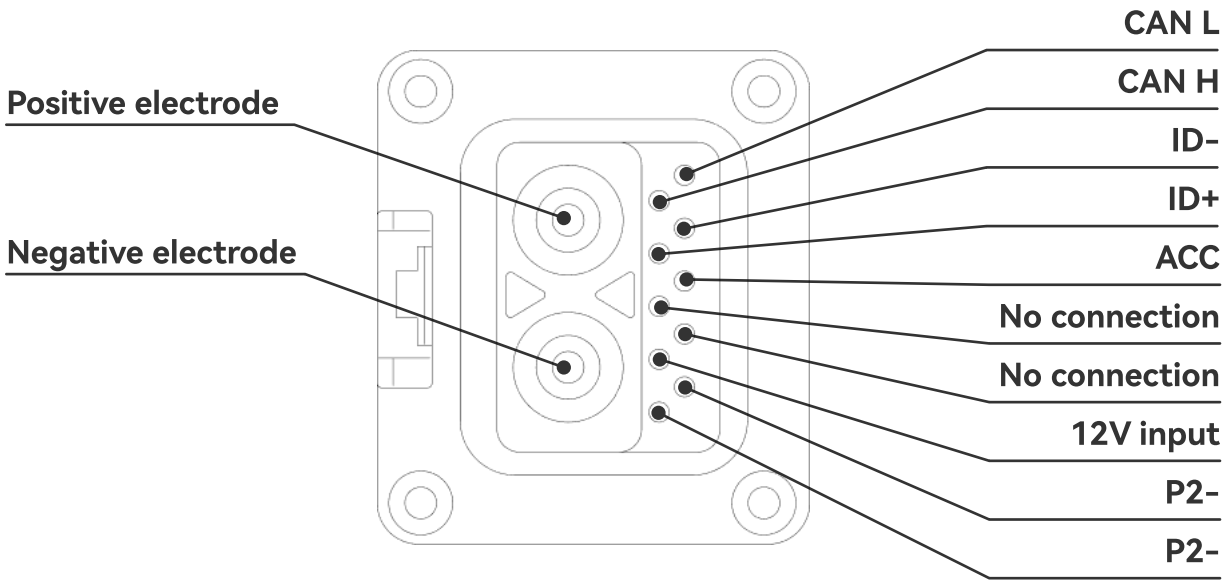

MINT 7240S Ba-ttery Pin definition

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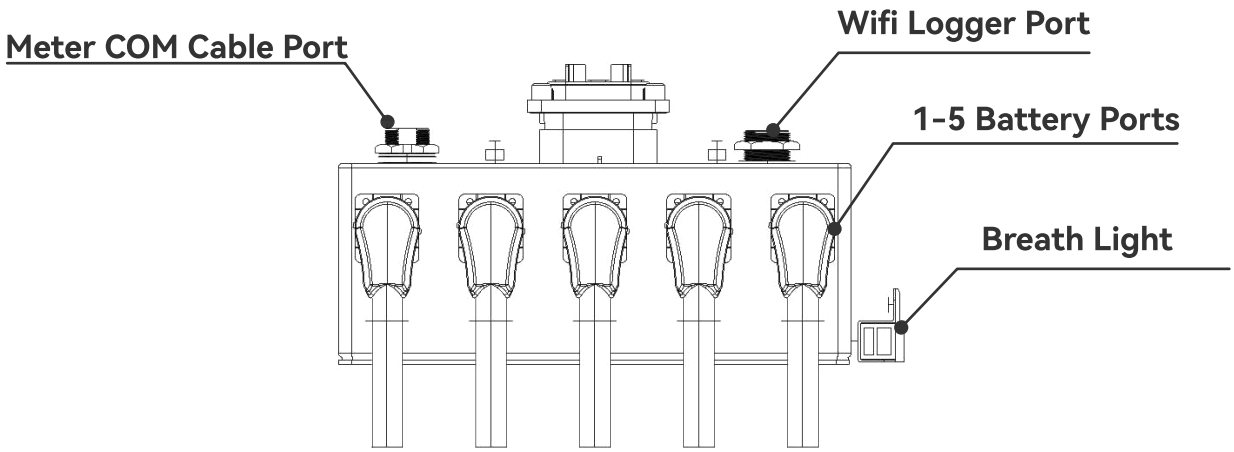
03-4 GreenVolt SMART+ Electrical Interface



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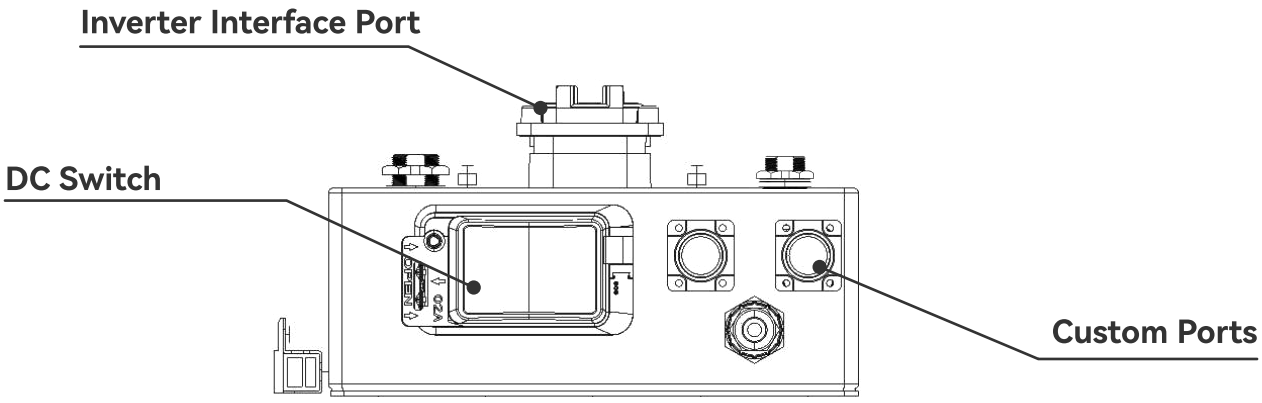

Right

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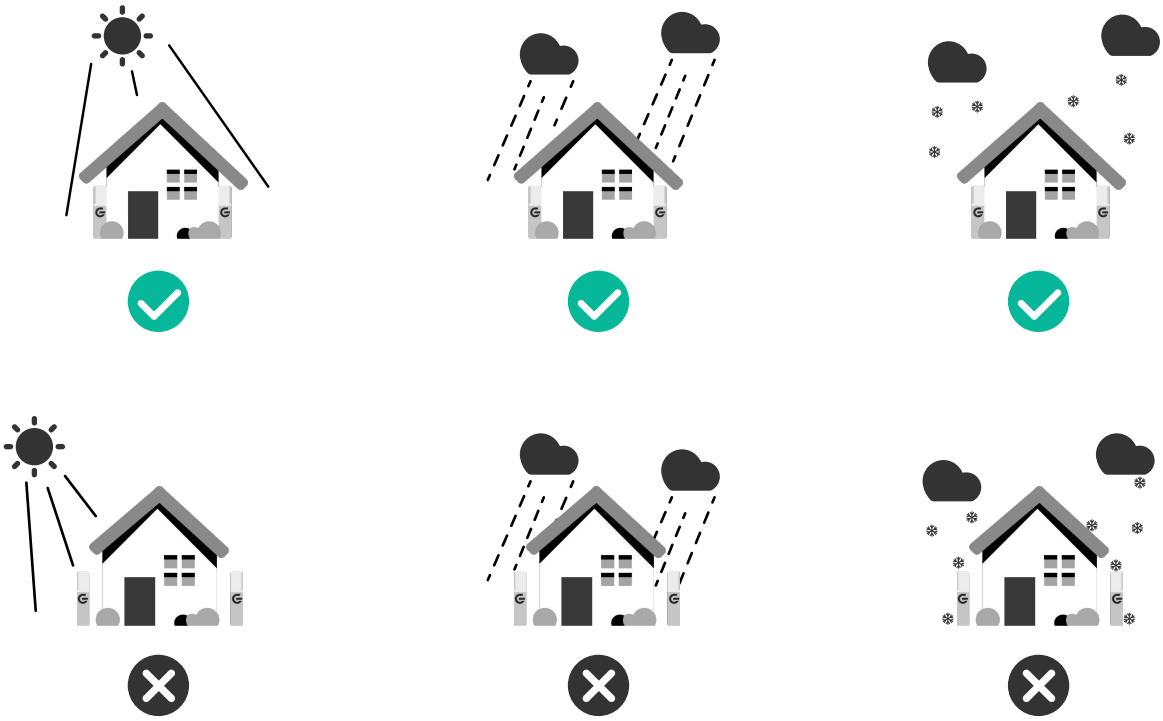
04 System introduction

04-1 Select a Location for GreenVolt

The following criteria should be considered:

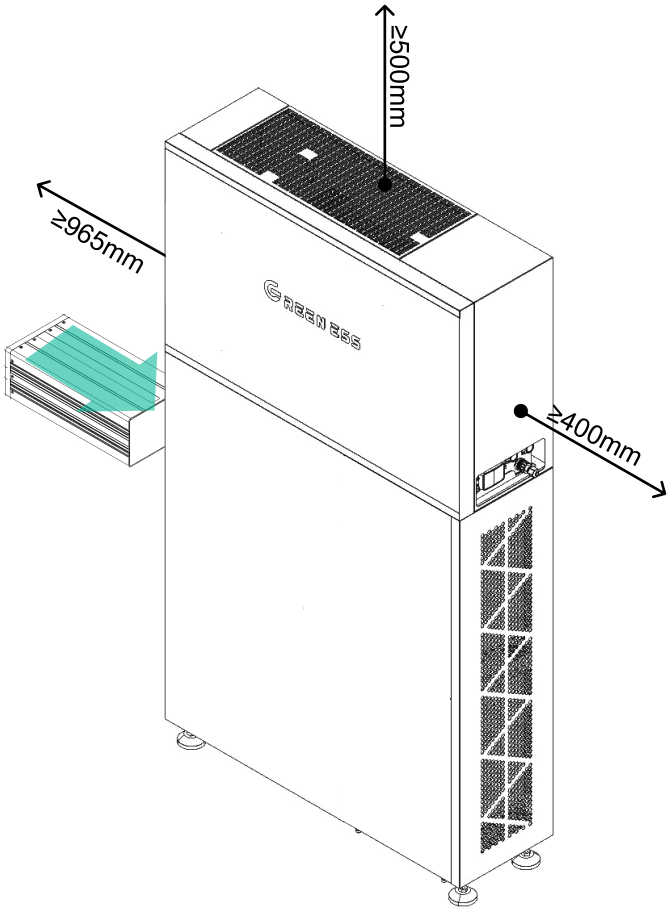
I. Exposure to direct sunlight may cause output power derating . It is recommended to avoid installing the inverter in direct sunlight .

II. It is recommended that the inverter is installed in a cooler ambient which doesn't exceed 104°F/40°C .



⚠ WARNING

Despite careful construction , electrical devices can cause fires .
Do not install the inverter in areas containing highly flammable materials or gases .
Do not install the inverter in potentially explosive atmospheres .
The mounting structure where the inverter is installed must be fireproof .



⚠ WARNING

Install on a wall or strong structure capable of bearing the weight of the product (24 . 18kg) .
Install vertically with a maximum incline of +/- 5 degrees , exceeding this may cause output power derating .
To avoid overheating , always make sure the flow of air around the product is not blocked . A minimum clearance of 400mm should be kept between products or objects.

⚠ NOTE

Nothing should be stored on or placed against the product.

04-2 Battery On and Off

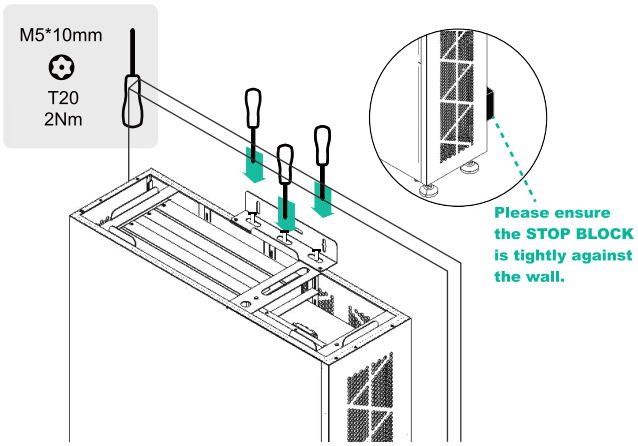
I. The battery stays on the status of Sleep Mode (no power output) until the connector is installed.
II. Once the connector is installed, the battery is electrically activated (Power on). The battery can be electrically deactivated via Upper computer command or GreenVo lt control.

04-3 Installation

04-3-1 Precautions

I. After opening the package, first check the battery and accessories. If the battery is damaged or there is an occurrence of missing parts, please contact the vendor.
II. Ensure the battery is switched off before installation.
III. Make sure the electrical specifications of the battery are compatible with the relevant devices and systems.
IV. Keep the battery away from flame and liquid.

04-3-2 Mounting the Battery house



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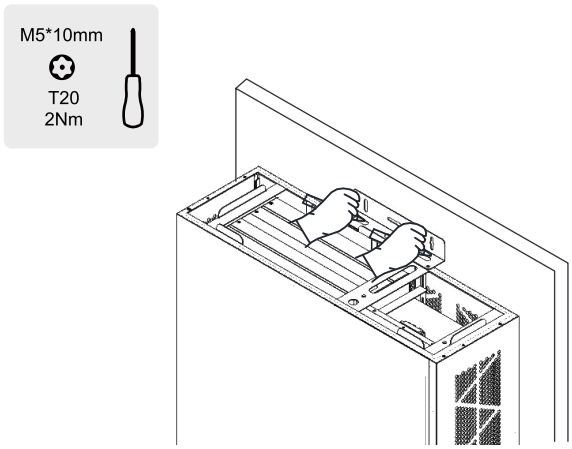

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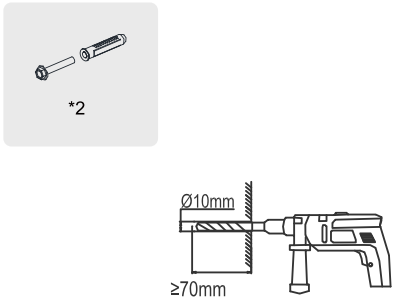

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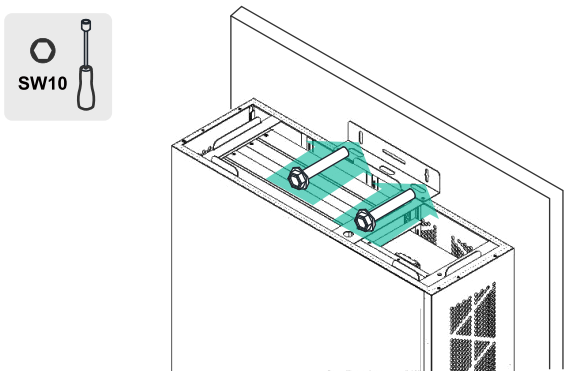

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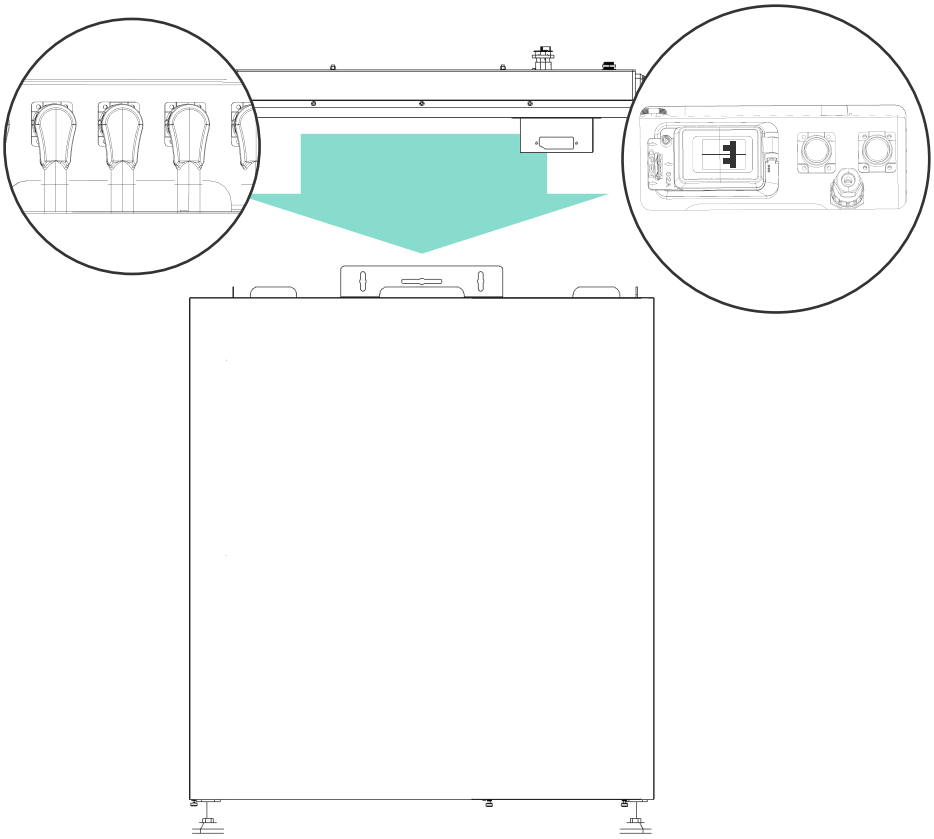
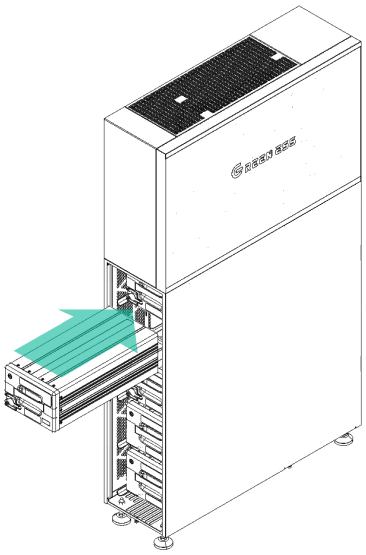
04-3-3 Stacking the control box on the top of the battery house:



04-3-4 Inserting and connecting the Battery into the battery house

I. Insert the battery into the house.

II. Align the connector with the socket.



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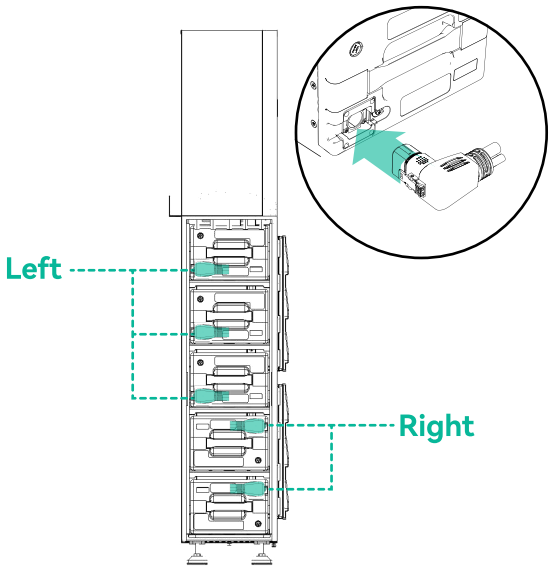

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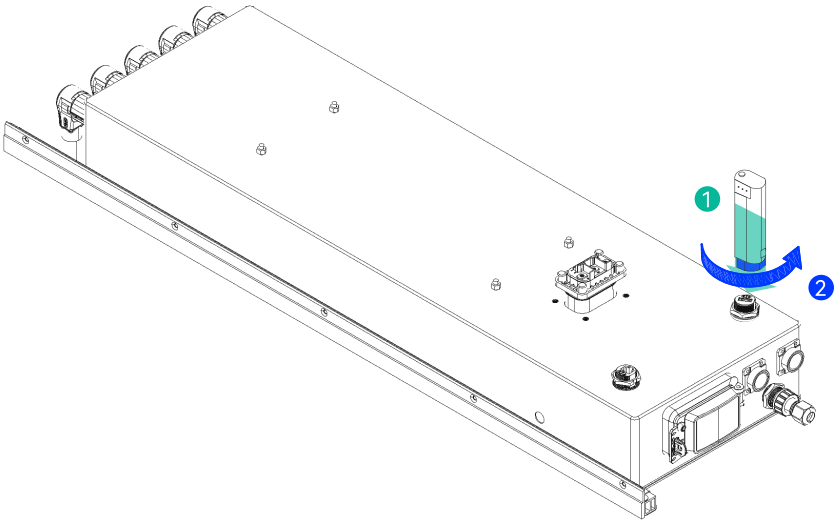
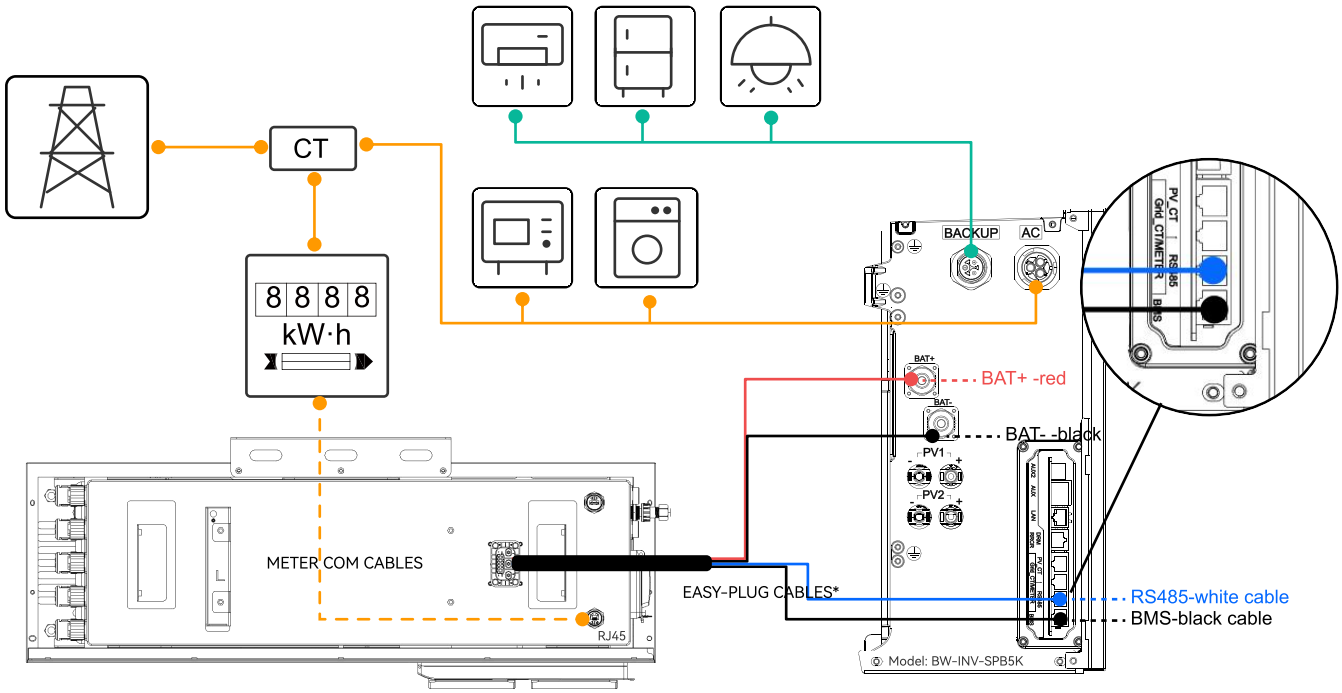
04-3-5 Data Logger Installation

I. Remove the watertight cap from the COM port.
II. I nsert the Data Logger to the port to match the joint .
III. Rotate the black ring on the Data Logger in clock-wise to secure the connection .



04-3-6 Connecting to the Inverter

Please refer to authorized professionals regards to white-listed inverters and installation instructions.



-EASY-PLUG CABLES (BATTERY P+ & P- , COM CABLES IN ONE) were provided in cable kit.

05 Commisioning & Operation

05-1 Startup procedure

Step 1 Turn on the PV switch (if there is) & AC grid MCB
Step 2 Waiting 30s.
Step 3 Turn on the DC switch on the Inverter & SMART+.
Step 4 Switch on the AC backup.

05-2 Shutdown procedure

Step 1 Turn off the AC circuit breaker at the grid-connection point .
Step 2 Turn off the PV DC switch of the inverter. (if there is)
Step 3 Turn off the battery circuit breaker.
Step 4 Wait until the device is powered off and the system is shut down .

⚠ NOTE

Ensure all the devices are accessible for operation , maintenance and service . C heck and confirm that the inverter is firmly installed .
Space for ventilation is sufficient for one inverter or multiple inverters .
Nothing is left on the top of the inverter or battery module .
Inverter and accessories are correctly connected .
Cables are routed in safe place or protected against mechanical damage . Warning signs and labels are suitably affixed and durable .
Measure DC voltage of PV strings and battery and ensure the polarity is correct . Measure AC voltage and frequency and ensure they are within local standard .

05-3 APP Download

Operators need to download the APP before commisioning. There are three ways to download and install the latest APP:

1 . You can visit www.greeness.com to download the latest version APP.
2 . You can search “iGE Cloud” in Google Play or App Store .
3 . You can scan this QR code below to download the APP .

06 Breath Light & Troubleshooting

Breath Light	Status	Descripition
Breathing in Green	Charging or Discharging	SOC is greater than50%, the LEDs breath once (duration 4s) over every 6s. Otherwise, LEDs breath once (duration 2s) over every 9s
Breathing in Yellow	Meter lost or Wifi lost	Please connect the system to the internet. Please check the Meter COM connection. Please contact GreenEss after-sales.
Flash in Yellow	Remote configration	LEDs flash 3 times once the remote configration command arrives.
Flash in Red	Fault or Protection	Please contact GreenEss After-sales.

MINT 7240 Indicator LEDS	Error Description	Recovery Methods
0.5 second on-time and a 1.5 second off-time	Over-Discharge Protection	Battery charging, automatic recovery when SOC > 0%
1.5 second on-time and a 0.5 second off-time	Overvoltage Protection	Charging stops and recovers automatically after consumption of battery power
1 second on-time and a 1 second off-time	Over Current Protection	Remove the overloading device Professional inspection to eliminate the cause of the over-loading
1 second on-time and a 1 second off-time	Short-Circuit Protection	Professional inspection to eliminate the cause of the short circuit

07 MINT 7240 Battery Maintenance and Disposal

07-1 Maintenance Instructions

I. The battery must be stored in dry and well-ventilated environment. If the storage temperature is too high or too low, this will affect the self-discharge rate of the battery and accelerate the natural aging of the battery. It is therefore recommended to store the battery at a temperature of 20~45℃ and stay away from water sources, heat sources, and metal objects.

II. If the battery is not going to be used for a long period of time, it is recommended to be stored intact in a semi-charged state (60% SOC). The battery is recommended to be discharged to 30% and then recharged to 60% every three months.

III. For safety reasons, the battery must not be stored at temperature above 45℃ (113℉) or below 20℃ (68℉).

IV. When the temperature of battery is equal to or below -20℃ (-4℉), the battery cannot be used for charging, discharging or heating.

V. To extend the service life of the battery, the battery is recommended to be used at 20℃ (68℉) to 45℃ (113℉).

VI. If the battery level is below 1% after use, it should be charged to 60% before storage. If the battery is left idle for a long period of time with critically low SOC, irreversible damage to the battery cell will occur, reducing the service life of the battery.

VII. If the battery SOC is critically low and being left idle for too long, it will enter deep sleep mode and will need to be recharged before it can be used again.

07-2 Disposal

I. If conditions permit, make sure that the battery is completely discharged before placing the battery in the designated battery recycling bin. The battery cells, which contain hazardous chemicals, are strictly prohibited from being placed in an ordinary garbage bin. For relevant details, please comply with the user's local laws and regulations regarding lithium battery recycling and disposal.

II. If the battery cannot be fully discharged due to the fault of the product itself, do not dispos e the battery directly. Contact a specialized battery recycling company for further disposal.

III. An over-discharged battery cannot be switched on. Please dispose the battery according to local laws and regulations.

08 Specifications

MODEL	BS5B	HS5B
BATTERY DATA		
Battery Type	LFP	
Battery Model	MINT 7240	
Nominal Battery Voltage	73.6V	
Nominal Installed Capacity	40Ah	
Nominal System Voltage	368V	
Max. Charging Current	25A	
Max. Discharging Current	40A	
System Battery Voltage Range	147.2~414V	

PV INPUT		
Max. PV Input Power	-	10kW
Max. PV Input Voltage	-	580V
MPPT Range	-	100~550V
Startup Voltage	-	100V
Max. Input Current	-	15A / 15A
Max. Short Circuit Current	-	18.75A / 18.75A
MPPT Trackers	-	2
Strings Per MPPT Tracker	-	1 / 1

WIND TURBINE PORT*		
Max. Power	-	-
Charging Current	-	-

*WIND TURBINE PORT is available on GreenVolt-HT15K.

	BS5B	HS5B
BACKUP PORT		
Surge Backup Power	10kVA	
Rated Backup Power	5kVA	
Rated Backup Voltage	230Vac	
Rated Backup Frequency	50 / 60Hz	
Transfer Time	<10ms	
SMART PV (Grid-Forming)	YES	
EFFICIENCY		
Max. Efficiency	-	97.3%
Europe Efficiency	-	96.2%
MPPT Efficiency	-	99.9%
Max. Round Trip Effidiency	90%	90%
GENERAL DATA		
Operating Temperature Range	-20°C~60°C	
Relative Humidity	0~95% (No Condensing)	
Operating Altitude	≤3000m (>3000m Derating)	
Cooling	Natural Convection	
Noise	<30dB	
Topology	Transformerless	
Protection Degree	IP65	
HMI&COMM		
Load Monitoring	Meter	
External Communication	WIFI / 4G	
User Interface	Breath Light / iGE APP / iGE-Cloud	

Mint 7240 Battery	
Net weight	27.9kg（+/- 0.5 kg)
Dimensions	226x157.5x470mm
Installed Capacity	2944Wh(40Ah)
Nominal Voltage	73.6V
Configuration	23S2P
Charging Cut-off Voltage	83.95V
Discharging Cut-off Voltage	57.5V
Max Continued Charging Current	40A
Max Continued Discharge current	40A
Battery Chemistry	LiFePO4
Cycle life	8000 cycles
	Condition: Max. 0.5C charge/discharge at 25±2℃
	Depth of Discharge (DoD) :100%
IP Rating	IP67
Operating Temperature	-20℃~50℃
Storage Temperature	-20~45℃, <3 months
	0~20℃, <6 months
Humidity Range	Max. 90%RH

CERTIFICATE	
Safety Regulation	IEC/EN 62109-1&2, IEC/EN 62477-1:2012, IEC 62040-1, IEC 62619:2022

Note: Specifications are subject to change without advance notice.

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