passion. create. smile.

Powerhill LV5K-100-B - PDU
Powerhill LV5K-100-B - Battery Module

User Manual

ESPD05110005PDA01B
ESWMI51H5110PDA01B

Manual de utilizare



335.42.25.0

Before using this product, carefully read all product documentation and retain it for future reference.

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Forward

Please read this manual before using the product.

This user manual introduces the energy storage module in terms of its installation, electrical connections, operation, commissioning, maintenance, and troubleshooting. Please read through the manual carefully before installing and using the energy storage module, and keep the manual for future reference.

Application Model

Powerhill LV5K-100-B - PDU
Powerhill LV5K-100-B - Battery Module

Applicable Personnel

This user manual is intended for photovoltaic (PV) inverter operating personnel and qualified electrical technicians.

NOTE!

This user manual is subject to change without prior notice.

Package Contents

Battery Module

No.	Item	Used for	Quantity
1	Battery module	Battery module	1
2	2g moisture-proof desiccant	Moisture-proof	2
3	Positioning pin	Used for positioning multiple packs	4
4	Fixing plate	Wall hanging bracket	1
5	Wall pendant	Wall hanging bracket	1
6	Philips Hexagon screw	To fix the fixing plate	4
7	304 stainless steel wall plug	To fix the wall hanging bracket	2

PDU

No.	Item	Used for	Quantity
1	The base	To put at the bottom of the battery	1
2	The top	Install at the top of the battery	1
3	Foot	Used for positioning multiple packs	4
4	Expansion screw	To fix the support frame	2
5	Cross shaped hexagonal three combination screw	Lock base L parallel machine fixing plate	1
6	Cross shaped hexagonal three combination screw	To fix the fixing plate	2
7	Fixing plate	Wall hanging bracket	1
8	Wall pendant	Wall hanging bracket	1
9	Positioning pin	Used for position multiple packs	4
10	Grounding cable	Used for the grounding	1
11	Communication network cable	One parallel cable and one communication cable	2
12	Red power line	Red power line	1
13	Black power line	Black power line	1
14	RJ45 waterproof body		2
15	Waterproof cover	Combiner box communication waterproof cover	2
16	Screws for waterproof cover		16
17	Red Battery connector	For parallel connection	1
18	Black Battery connector	For parallel connection	1

1 Safety Information

1.1 General Safety

Please carefully read the manual safety precautions, and observe all the safety instructions on the equipment and in this document.

The “DANGER”, “WARNING”, and “NOTICE” statements in this document do not cover all the safety instructions. They are only supplements to the safety instructions.

For user safety and utilization efficiency of this manual, a list of symbols are designed to alert people from danger. You must understand and comply with the emphasized information to avoid personal injury and property damage. Relative safety symbols have been listed below

	DANGER indicates a hazardous situation which, if not avoided will result in serious injury and
	WARNING indicates a hazardous situation which, if not avoided will result in property loss or void warranty.
NOTE!	**NOTE!** indicates normal situation which, if not avoided will result in that battery doesn’t work.

NOTE!

Follow local laws and regulations when installing, operating, or maintaining the equipment. The safety instructions in this document are only supplements to local laws and regulations.

1.2 Personal Safety

Personal Requirements

Personnel who plan to install or maintain battery equipment must be trained, understood all necessary safety precautions, and be able to perform all operations correctly.
Only qualified professionals or trained personnel are allowed to install, operate, and maintain the equipment.

DANGER

- Keep the batteries away from children and pets.
- Do not touch the energized battery, the temperature of the battery enclosure may increase during operation.
- Do not touch the energized battery terminals.
- Do not stand on, lean on, or sit on the battery.

1.3 Electrical Safety

Symbols on battery

There are some electrical symbols on battery relate to electrical safety. Please make sure you have fully understand them before installation.

	Electrical danger	Voltage exits when the battery is powered on. Only qualified engineers are allowed to operate.
	Earth connector	Earth connection
	DC positive and negative connect	Identify positive and negative connectors of DC power
	CE mark	The product meets CE certification
	WEEEtag	This product cannot be thrown away as household waste
	Recycle	Battery can be recycled

NOTE!

- Please use dedicated insulated tools for installation and maintenance.
- Please check the LED status indicator when the battery is powered on.
- Please ensure the communication cable is connected correctly between the battery and the inverter.
- Please check for inverter alarms and the Charge level reading once communication is established between the inverter and the battery.

1.4 Environment Safety

WARNING

- Ensure that the equipment is installed in a dry and well-ventilated environment.
- The installation position must be away from direct sunlight and rain.
- The installation position must be far away from fire sources.
- The installation position must be far away from all sources of water.
- The bracket must be installed solid and horizontal.
- Do not expose the equipment to flammable or explosive gas or smoke.
- Do not perform any operation on the equipment in such environments.
- The operation and service life of the battery depend on the operating temperature. Operate the battery at a temperature equal to or better than the ambient temperature. The recommended operating temperature ranges from 0°C to 30°C.

1.5 Transportation Safety

WARNING

- The products have passed UN38.3 certification.
- The products have MSDS documents available.
- The products belong to class 9 dangerous goods.
- Please protect the packing case from the below situations:
  - Being dampened by rains, snow, falling into water.
  - Falling or mechanical impact.
  - Being upside-down or tilted.

DANGER

- Before installation, ensure that the equipment is intact.Otherwise, electric shocks or fire may occur.
- Do not connect or disconnect power cables while the battery is powered on, as this may cause electric arcs, sparks, fire, or even personal injury.
- Before connecting a power cable, check the positive or negative connectors are correct.
- Do not connect the batteries in series.
- Do not connect battery with AC directly.
- Do not connect battery with PV wiring directly.
- Do not connect the battery with different batteries in parallel.
- Do not connect battery to faulty or unqualified inverter or charger.
- Do not create short circuits with the external connection.
- Make sure the grid is cut off and the battery is powered off before maintenance.
- Make sure the earth cable is connected correctly before operation.

WARNING

- Recharge the battery in every six months if not in use.
- Recharge battery within 10 days after battery is fully discharged.
- Ensure the battery cable is installed correctly.
- When the battery is being installed or repaired, ensure the battery is powered off and and isolated. Using a multimeter check to ensure there is no voltage in the positive and negative terminals.

2 Product Information

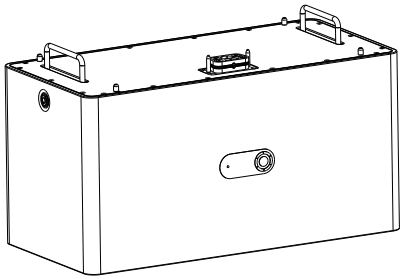
2.1 Battery Overview

The battery is a low-voltage battery storage system which consists of long span LiFePO4 battery cells and functional BMS. It can store and release electric energy based on the requirements of the inverter controller. It is mainly for home energy storage system.

Features

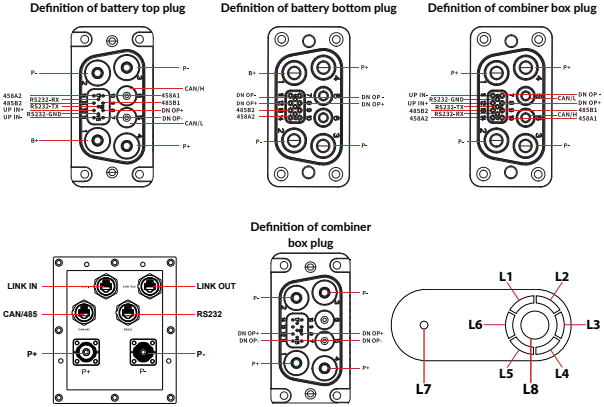
- LiFePO4 prismatic cell.
- 6000 cycles @25°C , 0.5C, 80% DOD.
- Scalability up to 5 pcs
- Scalable up to 4 systems with 20 battery modules to 102.4 KWh
- Protective and active BMS allows greater reliability and controll
- IP 65 grade
- Fire suppression module built-in
- Remote Assistance
- Connectors built-in design
- Fully recyclable at the end of life
- Compact

2.2 Battery Module



2.3 Port definitions

2.3.1 Connection Area



2.3.2 ON/OFF

1 ON

For single Battery Module, long press (more than 3 seconds) ON/OFF button, the Normal LED indicator on the front panel will flash, then the battery will operate normally. L1 to L6 show battery Charge level, L7/L8 shows battery status.

For multiple Battery Modules in parallel, long press (more than 3 seconds) ON/OFF button of MASTER battery (which is connected to the inverter), the Normal LED indicator will flash, then the battery system will automatically encode and assign ID to each slave battery and the battery system will operate normally.

NOTE!

For multiple batteries in parallel, only the LED State of Charge indicator of the Master battery will flash to show the Charge level level of the whole system, and the LED State of Charge indicators of the slave batteries will turn off, while the Normal&Alarm LED indicators will operate normally.

2 OFF

Press ON/OFF button of the Master PACK (which is connected to the inverter) for more than 3s, the LED indicator on the front panel will flash, and then release the button, the master pack will shut down after all the slave packs shut down (Sleep Mode).

For single Battery Module, long press (more than 3 seconds) ON/OFF button,the LED indicator on the front panel will flash, and then release the button, the battery will shut down.

For the system connected with inverter, there is an air switch between the inverter and battery system, normally the air switch keeps off-state if the system does not work.

2.3.3 Link Communication Port

RJ45 port supports CAN / RS485 / RS232 communication protocol.
CAN/RS485 communication terminal (RJ45 port) connects to the inverter and follows CAN / RS485 protocol.

RS232 communication terminal (RJ45 port) follows RS232 protocol, for manufacturer or professional engineer to debug or service.

CAN/485	
PIN	**Definition**
Pin 1	RS485-B
Pin 2	RS485-A
Pin 3	/
Pin 4	CAN-H
Pin 5	CAN-L
Pin 6	/
Pin 7	RS485-A
Pin 8	RS485-B

RS232	
PIN	**Definition**
Pin 6	RS232_RX
Pin 7	RS232_GND
Pin 8	RS232_TX

LINK IN	
PIN	**Definition**
Pin 2	485A2
Pin 3	485B2
Pin 4	UP IN+
Pin 5	UP IN-

LINK OUT	
PIN	**Definition**
Pin 2	485A2
Pin 3	485B2
Pin 4	DF OP+
Pin 5	DF OP

2.3.4 Indicator Definition



flash 1 - 0.25s on/3.75s off

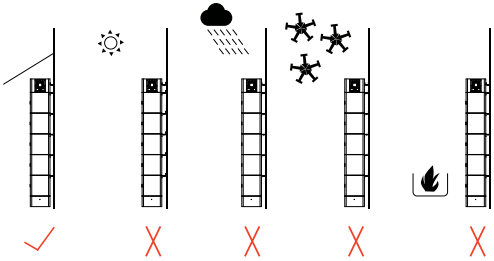
flash 2 - 0.5s on/ 0.5s off

flash 3 - 0.5s on/ 1.5s off

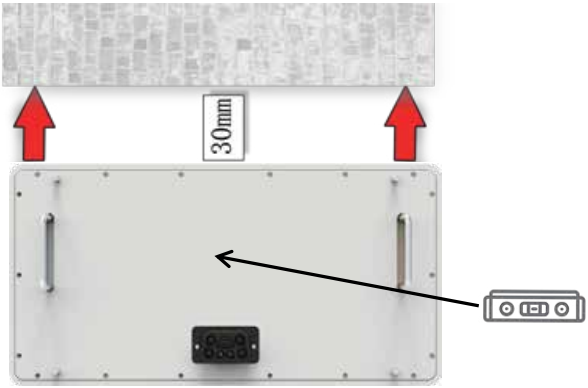
LED Indicators Definitions

State	Normal/alarm/ protection	RUN	ALM	Power charge level (LED indicator)						Instruction
		●	●	●	●	●	●	●	●	
Shut down	Sleep	off	off	off	off	off	off	off	off	All off
Standby	Normal	Flash1	off	According to battery indicator						Standby state
	Alarm	Flash1	flash3							Module of low voltage
Charging	Normal	on normally	off	According to battery indicator(Battery indicator maximum LED flash 2)						Maximum power LED flash (2),
	Alarm	on normally	flash3							
	Overcharge protection	on normally	off	On normally	on normally	on normally	on normally	on normally	on normally	If there is no mains supply, the indicator is in standby state
	Temperature, over current, fail-safe protection	off	on normally	off	off	off	off	off	off	Stop charging
Discharging	Normal	flash3	off	According to battery indicator						
	Alarm	flash3	flash3							
	Under-voltage protection	off	off	off	off	off	off	off	off	Stop discharging
	Temperature, over current, short-circuit, reverse connection, fail-safe protection	off	on normally	off	off	off	off	off	off	Stop discharging
Failure		off	on normally	off	off	off	off	off	off	Stop charging and discharging

2.4 Installation

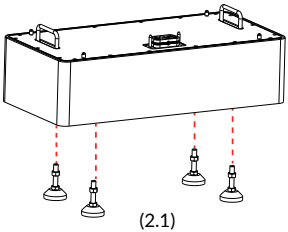


Step 1
Place the base against the wall, the distance between the base and the wall is 30mm as followed.



NOTE!
Levelness of the base is less than 2mm

Step 2
Screw the foot cup into the base, then place the first battery pack on the base.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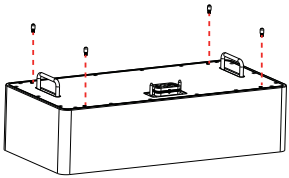
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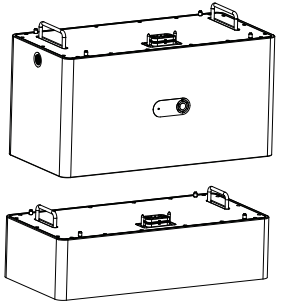

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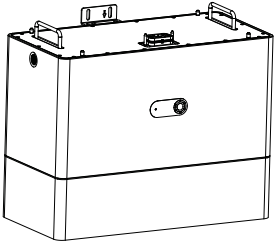
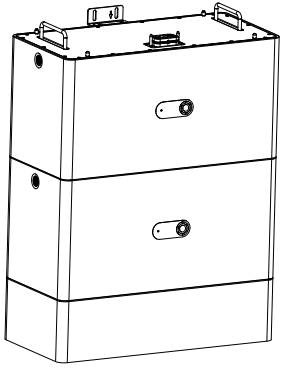
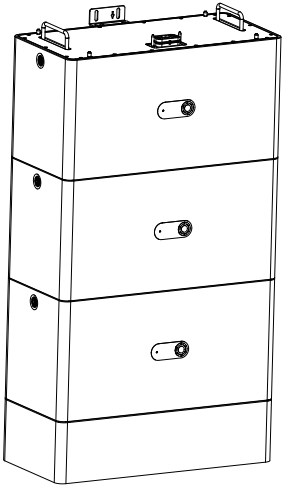


(2.4)

Step 3
Screw the foot cup into the base, then place the first battery pack on the base.

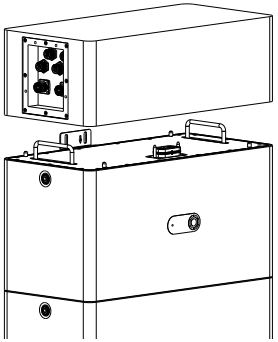


(3.1)

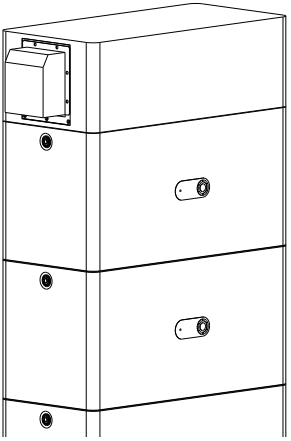


(3.2)

Step 4
Place the combiner box on top of the last battery and then install the dust cover.

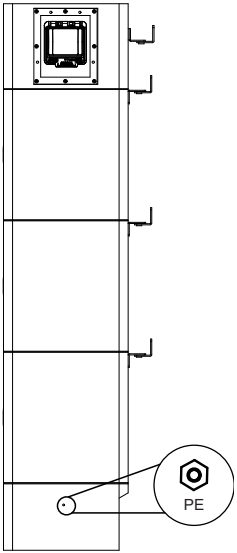


(4.1)



(4.2)

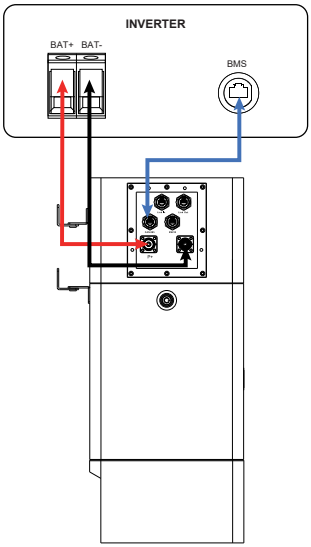
Step 5
Carefully align the wall bracket with the backplate on the Controller,and secure it in place.



Step 6
1. Load power exceeding 5kW requires at least 2 layers of stacking.
2. The maximum number of stacking layers is 5 and the maximum output power is 10kW. The power of the inverter selected for the battery module must be less than the maximum output power of the battery module.

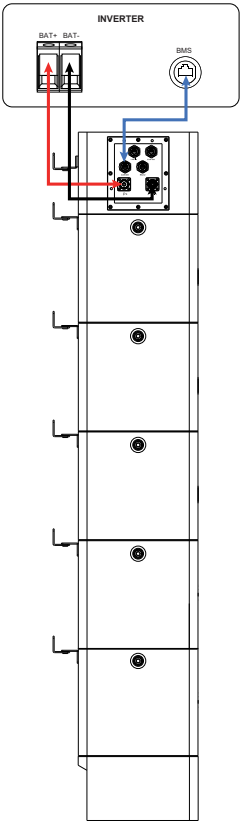
Stacking layers	Load power
1 layer	5kW
2-5 layers	5-10kW

Danger	Ensure power cables are installed with the correct polarity. A dangerous situation may arise if the polarities are reversed.
Danger	Do not create a short circuit between the positive and negative terminals of the battery. Ensure the polarity is correct during installation.
Warning	Incorrect communication cable connection will cause the battery system to operate in unexpected ways which may lead to system failure.



NOTE!

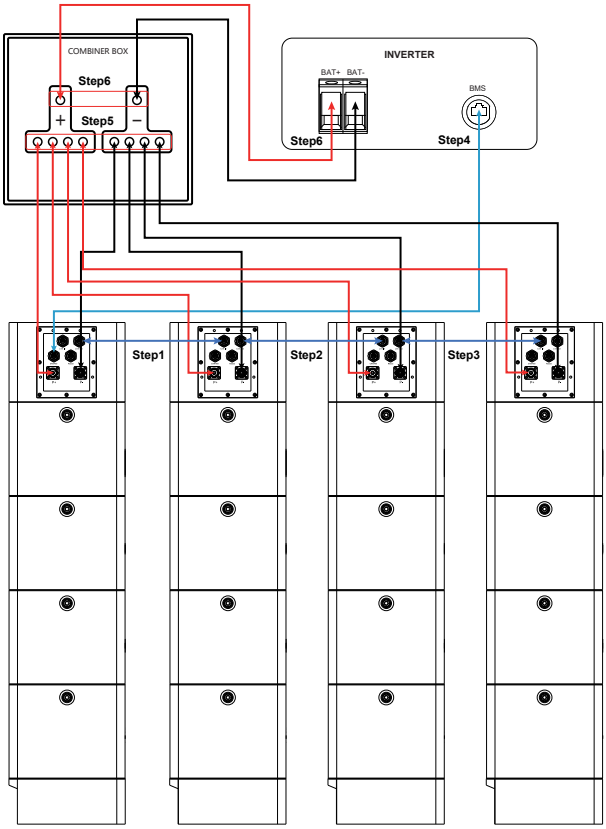
1-layer wiring method



NOTE!

2 to 5 layer wiring method.
The number of layers in the middle is omitted.

When using an inverter of 10kW or above, the positive and negative ports of each battery must be connected in the wiring method shown in the figure below. In order to ensure equal current flow, the length of the two positive and negative poles connecting lines must be the same.)



English

Română

3 Maintenance

• Recharge Requirements During Normal Storage.
Battery should be stored in an environment with temperature range between -10°C ~ +45°C and maintained regularly according to following table with 0.5C current till 50% Charge level after long storage time.

Storage Environment Temperature	Relative Humidity of Storage Environment	Storage Time	Charge level
Below - 10°C	/	Prohibit	/
-10 ~ 25°C	5%-70%	≤12 months	Charge level≥60%
-25 ~ 35°C	5%-70%	≤6 months	Charge level≥60%
35 ~ 45°C	5%-70%	≤3 months	Charge level≥60%
Above 45°C	/	Prohibit	/

• Recharge Requirements When Over Discharged
Over discharged (90%DOD) battery should be recharged according to following table, otherwise over discharged battery will be damaged.

Storage Environment Temperature	Storage Time	Note
-10 ~ 25°C	≤15 days	Battery Pack disconnected to inverter
-25 ~ 35°C	≤7 days	
35 ~ 45°C	≤12 hours	Battery Pack connected to inverter



Disposal of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste.

Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources.

Prefata

Cititi acest manual in totalitate inainte de a utiliza produsul.

Acest manual prezinta instalarea, conectarea electrica, operarea, punerea in functiune, mentenanta si depanarea modulelor de baterie. Cititi acest manual in totalitate inainte de a-l instala si utiliza cabinetul de baterii modular si pastrati-l pentru viitoare. Referinte.

Model caruia se aplica

Powerhill LV5K-100-B - PDU
Powerhill LV5K-100-B - Battery Module

Personal caruia ii se aplica

Acest manual este dedicat exclusiv personalului autorizat de instalatii fotovoltaice si tehnicieni in instalatii electrice.

NOTA!

Acest manual poate fi modificat fara avertisment in prealabil.

Continut Cutie

Modul baterie

Nr.	Articol	Utilizat pentru	Cantitate
1	Modul de baterie	Modul de baterie	1
2	2g desicant rezistent la umiditate	Protectie impotriva umezelii	2
3	Pin de pozitionare	Utilizat pentru poizitionarea corecta a bateriilor	4
4	Placa de fixare	Suport de perete	1
5	Suport de perete	Suport de perete	1
6	Surub hexagonal Phillips cu trei saibe	Pentru fixarea suportului	4
7	Diblu din otel inoxidabil 304	Pentru fixarea suportul de perete	2

PDU

Nr.	Articol	Utilizat pentru	Cantitate
1	Element de baza	A se instala la baza sistemului de baterii	1
2	Element superior	A se instala deasupra sistemului de baterii	1
3	Picior	Pentru elementul de la baza sistemului	4
4	Diblu	Pentru fixarea suportului	2
5	Surub hexagonal Phillips cu trei saibe	Pentru fixarea placii L	1
6	Surub hexagonal Phillips cu trei saibe	Pentru fixarea capacului impermeabil	2
7	Suport de perete	Suport de perete	1
8	Suport	Pentru fixarea suportul de perete	1
9	Pin de pozitionare	Utilizat pentru poizitionarea corecta a bateriilor	4
10	Cablu impamantare	Pentru conectarea impamantarii	1
11	Cabluri de comunicatie	Un cablu de comunicatie cu invertorul si un cablu pentru conectarea in paralel	2
12	Cablu de putere rosu	Conexiunea de putere +	1
13	Cablu de putere negru	Conexiunea de putere -	1
14	Capac impermeabil RJ45		2
15	Capac impermeabil		2
16	Șuruburi pentru capacul impermeabil		16
17	Conector de baterie rosu	Pentru conexiune paralelă	1
18	Conector de baterie negru	Pentru conexiune paralelă	1

1 Informatii de siguranta

1.1 Conditii de siguranta generala

Va rugam sa cititi cu atentie masurile de siguranta ale manualului si sa respectati toate instructiunile de pe echipament si din acest document.

Anunturile „PERICOL", „AVERTISMENT" si „NOTA" din acest document nu acopera toate conditiile de siguranta. Sunt doar suplimentari.

Pentru siguranta utilizatorului si utilitatea acestui manual, o lista de simboluri sunt descrise pentru a alerta personalul de situatiile periculoase. Trebuie intelese si respectate informatiile subliniate pentru a evita vatamarea corporala si pagube materiale. Simbolurile de siguranta sunt explicate mai jos.

	PERICOL Indica o situatie periculoasa, care daca nu este tratata cu maxima precautie va rezulta in vatamari grave chiar moartea
	AVERTISMENT Indica o situatie periculoasa care daca nu este evitata va rezulta in deteriorarea produsul sau pierderea garantiei.
NOTA!	NOTA! Indica o situatie comuna, dar care daca nu este evitata va duce la functionarea proasta a bateriei.

NOTA!

Respectati reglementarile locale atunci cand instalati, utilizati sau intretineti echipamentul. Instructiunile de siguranta din acest document sunt doar suplimentari la reglementarile locale.

1.2 Siguranta personalului

Cerinte
Personalul care intentioneaza sa instaleze sau sa intretina echipamentul trebuie sa fie instruit in prealabil, sa inteleaga toate masurile de siguranta necesare si sa poata efectua corect toate operatiunile.
Doar personal instruit are permisiunea sa instaleze, sa opereze si sa intretina echipamentul.

⚠ PERICOL

- Nu asezati bateria intr-o zona usor accesibila pentru copii sau animale de companie.
- Nu atingeti bateria sub tensiune, temperatura carcasei bateriei poate creste in timpul functionarii.
- Nu atingeti bornele bateriei sub tensiune.
- Nu va sprijiniti si nu va asezati pe baterie.

1.3 Siguranta electrica

Simbolurile de pe modul
Exista cateva simboluri electrice pe modul legate de siguranta electrica. Va rugam sa va asigurati ca le-ati inteles pe deplin inainte de instalare.

	Pericol de electrocutare	Echipamentul este sub tensiune atunci cand este pornit. Doar personal calificat poate opera acest echipament.
	Impamantare	Impamantare
	CC pozitiv si negativ	Identificati terminalul +/- pentru curentul continuu CC.
	Insemanrea CE	Acest produs este agreat de certificarea CE.
	Eticheta WEEE	Acest produs nu poate fi aruncat ca gunoi menajer
	Reciclare	Bateria poate fi reciclata

English
Română

PERICOL

- Inainte de instalare, asigurati-va ca echipamentul este intact. In caz contrar, poate genera socuri electrice sau incendii.
- Nu conectati sau deconectati cablurile de alimentare cand bateria este pornita. Se pot genera arcuri electrice si scantei, incendiu sau vatamare corporala.
- Inainte de a conecta un cablu de alimentare, verificati conectorii +/- sa fie corect conectati.
- Nu conectati bateriile in serie.
- Nu conectati bateria direct la curent alternativ (CA)
- Nu conectati bateria direct la cablajul fotovoltaic.
- Nu conectati bateria in paralel cu baterii diferite.
- Nu conectati bateria la invertorul defect.
- Nu creati scurtcircuite cu conexiune externa.
- Asigurati-va ca intrerupeti alimentarea de la retea si opriti bateria inainte de mentenanta.
- Asigurati-va ca cablul de impamantare este conectat corect inainte de utilizare.

AVERTISMENT

- Incarcati bateria la fiecare sase luni.
- Reincarcati bateria in 10 zile dupa descarcarea completa a bateriei.
- Asigurati-va ca amplasarea cablului bateriei este corect.
- Cand bateria este instalata sau reparata, asigurati-va ca bateria este oprita si izolata. Folositi un multimetru pentru a verifica daca nu exista tensiune in bornele pozitive si negative.

NOTA!

- Va rugam sa utilizati instrumente izolate dedicate pentru instalare si mentenanta.
- Va rugam sa va asigurati ca toate bateriile sunt oprite atunci cand adaugati module de baterii aditionale.
- Va rugam sa verificati secventa de lumini atunci cand bateria este pornita.
- Asigurati-va ca conexiunea de comunicare dintre baterie si invertor este corect facuta.
- Va rugam sa verificati alarma invertorului sau citirea Nivelului bateriei daca BMS comunica cu invertorul.

1.4 Mediu de siguranta

AVERTISMENT

- Asigurati-va ca echipamentul este instalat intr-un loc uscat si bine ventilat.
- Locul de instalare trebuie sa fie ferit de lumina directa a soarelui si de ploaie.
- Locul de instalare trebuie sa fie departe de sursele de foc.
- Locul de instalare trebuie sa fie departe de sursele de apa precum robinete, conducte de canalizare si sprinklere pentru a preveni infiltrarea apei.
- Suportul trebuie sa fie solid si orizontal.
- Nu expuneti echipamentul la gaze inflamabile, explozive sau fum.
- Nu efectuati nicio operatiune asupra echipamentului in conditii precare.
- Functionarea si durata de viata a bateriei depind de temperatura. Utilizati bateria la o temperatura apropiata de temperatura ambianta. Temperatura de functionare recomandata este de la 0°C la 30°C.

1.5 Transportation Safety

AVERTISMENT

- Produsele au obtinut certificarea UN38.3.
- Produsele dispun de documente MSDS.
- Produsele fac parte din clasa 9 marfuri periculoase.
- Va rugam sa protejati cutia de ambalare de ploi, ninsori sau caderi in apa, cadere de la inaltime sau impact mecanic, plasarea in pozitii diferite de cea indicata pe cutie.

2 Informatii produs

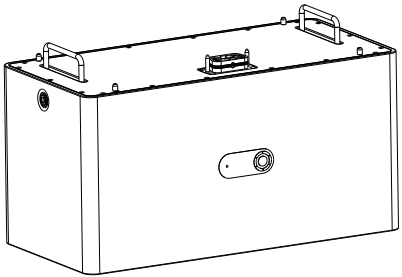
2.1 Descrierea bateriei

Bateria este un suport cu module de baterii cu litiu de joasa tensiune, care consta din celule de baterie LiFePO4 de lunga durata si BMS integrat. Poate stoca si furniza energie electrica in functie de cerintele controlerului invertorului. Este utilizata in principal pentru sistemul fotovoltaic din medii rezidentiale.

Caracteristici

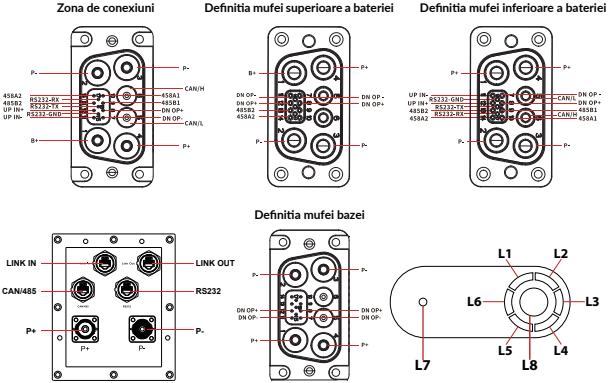
- Celula prismatica LiFePO4.
- 6000 de cicluri @ 0.5C si 25 °C.
- BMS protector si activ permite o fiabilitate si un control mai mare.
- Scalabilitate pana la 5 bucati
- Scalabil pana la 4 sisteme cu 20 de module de baterii pana la 102,4 KWh.
- Clasa IP 65
- Conectori incorporati in design
- Reciclabil complet la sfarsitul duratei de viata
- Compact
- Modul de stingere a incendiilor incorporat
- Asistenta la distanta

2.2 Modul Baterie



2.3 Definitii porturi

2.3.1 Zona de conexiuni



2.3.2 PORNIRE / OPRIRE

1 PORNIRE

Pentru un singur modul de baterie, apasati lung (mai mult de 3 secunde) butonul ON/OFF, indicatorul LED Normal de pe panoul frontal va clipi, apoi bateria va functiona normal. L1 pana la L6 indica Nivelul bateriei, L7/L8 indica starea bateriei.

Pentru mai multe module de baterie in paralel, apasati lung (mai mult de 3 secunde) butonul ON/OFF al bateriei MASTER (care este conectata la invertor), indicatorul LED Normal va clipi, apoi sistemul de baterii va codifica automat si va atribui un ID fiecarei baterii slave, iar sistemul de baterii va functiona normal.

NOTA!

Pentru mai multe baterii conectate in paralel, numai indicatorul LED de stare de incarcare al bateriei Master va clipi pentru a afisa nivelul Nivelul bateriei al intregului sistem, iar indicatorii LED de stare de incarcare ai bateriilor slave se vor stinge, in timp ce indicatorii LED Normal&Alarm vor functiona normal.

2 OPRIRE

Apasati butonul ON/OFF al Master PACK (care este conectat la invertor) timp de mai mult de 3 secunde, indicatorul LED de pe panoul frontal va clipi, apoi eliberati butonul, master pack-ul se va opri dupa ce toate slave pack-urile se vor opri (modul Sleep).

Pentru un singur modul de baterie, apasati lung (mai mult de 3 secunde) butonul ON/OFF, indicatorul LED de pe panoul frontal va clipi, apoi eliberati butonul, bateria se va opri.

Pentru sistemul conectat la invertor, exista un intrerupator automat intre invertor si sistemul de baterii. In mod normal, acest intrerupator ramane in pozitia oprit (off) atunci cand sistemul nu este in functiune.

2.3.3 Porturi de comunicare

Portul RJ45 accepta protocolul de comunicare CAN / RS485 / RS232.

Terminalul de comunicare CAN/RS485 (port RJ45) se conecteaza la invertor si respecta protocolul CAN / RS485.

Terminalul de comunicare RS232 (port RJ45) respecta protocolul RS232, pentru ca producatorul sau inginerul sa poata depana sau repara.

CAN/485	
PIN	**Definition**
Pin 1	RS485-B
Pin 2	RS485-A
Pin 3	/
Pin 4	CAN-H
Pin 5	CAN-L
Pin 6	/
Pin 7	RS485-A
Pin 8	RS485-B

RS232	
PIN	**Definition**
Pin 6	RS232_RX
Pin 7	RS232_GND
Pin 8	RS232_TX

LINK IN	
PIN	**Definition**
Pin 2	485A2
Pin 3	485B2
Pin 4	UP IN+
Pin 5	UP IN-

LINK OUT	
PIN	**Definition**
Pin 2	485A2
Pin 3	485B2
Pin 4	DF OP+
Pin 5	DF OP

2.3.4 Definitii indicatoare LED



flash 1 - 0.25s aprins/3.75s stins

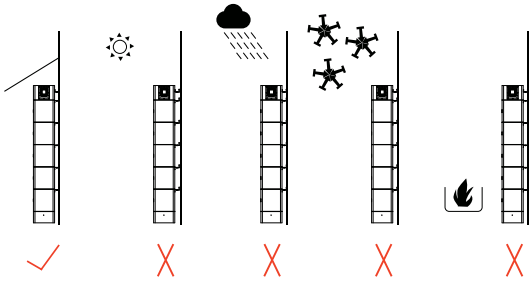
flash 2 - 0.5s aprins/0.5s stins

flash 3 - 0.5s aprins/1.5s stins

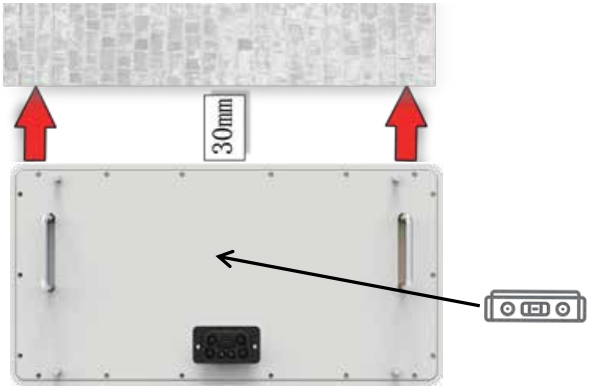
Definitii indicatoare LED

Stare	Normal/Alarmă/ Protectie	Functionare	ALM	Nivel Baterie (LED indicator alimentare)						Instructiuni
		●	●	●	●	●	●	●	●	
	Repaus	oprit	oprit	oprit	oprit	oprit	oprit	oprit	oprit	Toate oprite
Standby	Normal	Intermitent1	oprit	Conform indicatorului bateriei						Stare standby
	Alarma	Intermitent1	Intermitent3							Modul de joasă tensiune
Incarcare	Normal	Pornit normal	oprit	Conform indicatorului bateriei (LED indicator baterie intermitent 2)						LED putere maxima Intermitent 2
	Alarma	Pornit normal	Intermitent3							
	Protectie la supraincarcare	Pornit normal	oprit	Pornit normal	Pornit normal	Pornit normal	Pornit normal	Pornit normal	Pornit normal	Dacă nu există alimentare de la rețea, indicatorul este în stare standby
	Temperatura, supracurent, protectie de siguranta	oprit	Pornit normal	oprit	oprit	oprit	oprit	oprit	oprit	Opriți incărcarea
Descarcare	Normal	Intermitent3	oprit	Conform indicatorului bateriei						
	Alarma	Intermitent3	Intermitent3							
	Protectie la subtensiune	oprit	oprit	oprit	oprit	oprit	oprit	oprit	oprit	Opriți incărcarea
	Temperatură Supracurent Scurtcircuit Conexiune inversă Protecție de siguranță	oprit	Pornit normal	oprit	oprit	oprit	oprit	oprit	oprit	Opriți incărcarea
Defectiune		oprit	Pornit normal	oprit	oprit	oprit	oprit	oprit	oprit	Opriți incărcarea si descarcarea

2.4 Instalare

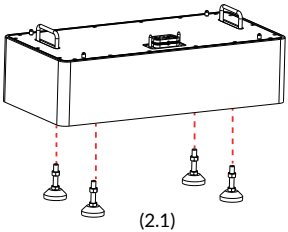


Pasul 1
Asezati baza pe perete, distanta dintre baza si perete fiind de 30 mm, dupa cum se arata in imagine.



NOTA!
Planeitatea bazei este sub 2 mm

Pasul 2
Insurubati picioarele in baza, apoi asezati primul pachet de baterii pe baza.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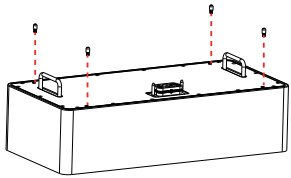
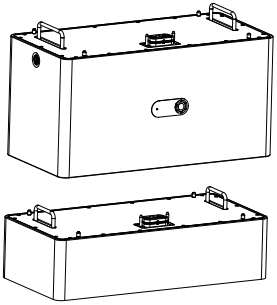
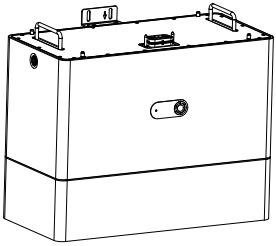

(2.2)

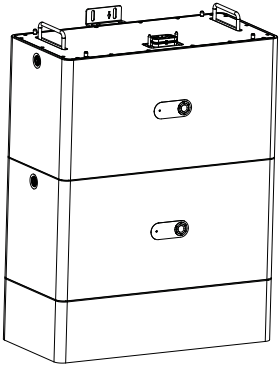


(2.3)

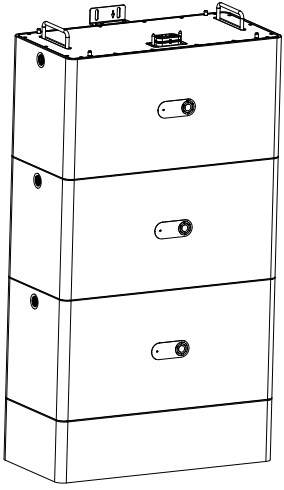


(2.4)

Pasul 3
Asa cum se arata in fotografii, incepeti de la primul etaj, fiecare etaj trebuie fixat pe perete cu placi de fixare.



(3.1)

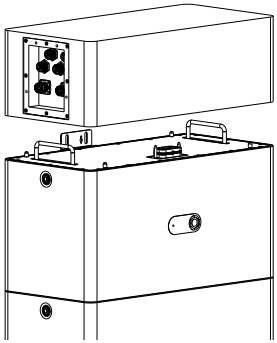


(3.2)

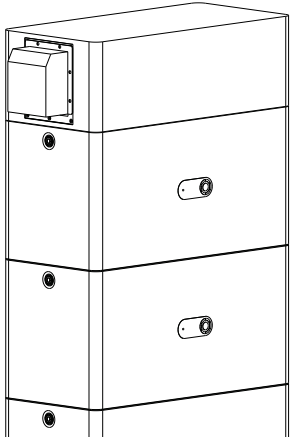
English

Română

Pasul 4
Asezati cutia superioara deasupra ultimei baterii, apoi instalati capacul de protectie.

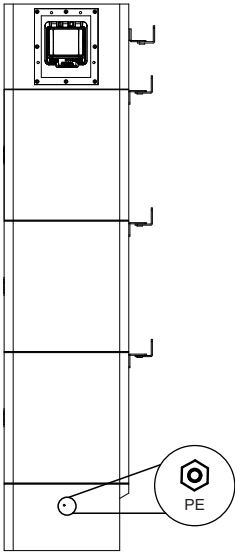


(4.1)



(4.2)

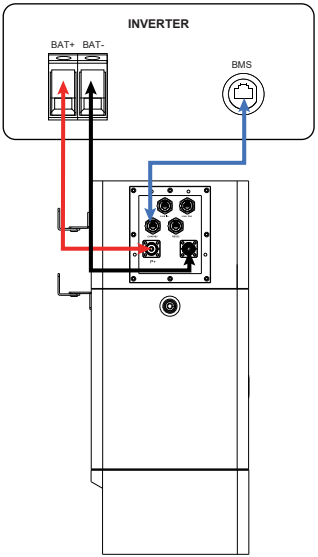
Pasul 4
Asezati cutia superioara deasupra ultimei baterii, apoi instalati capacul de protectie.



Pasul 6
1. Sarcina care depaseste 5 kW necesita cel putin 2 baterii.
2. Numarul maxim de baterii suprapuse este 5, iar puterea maxima de iesire este de 10 kW. Puterea invertorului selectat pentru modulul bateriei trebuie sa fie mai mica decat puterea maxima de iesire a modulului bateriei.

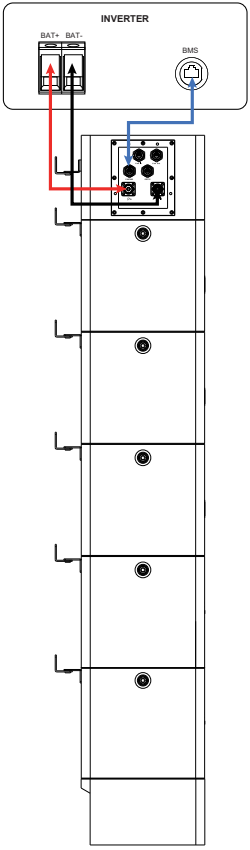
Numar baterii	Sarcina
1 baterie	5kW
2-5 baterii	5-10kW

Danger	Asigurati-va ca cablurile de alimentare sunt instalate cu polaritatea corecta. Poate aparea o situatie periculoasa daca polaritatile sunt inversate.
Danger	Nu creati un scurtcircuit intre bornele pozitive si negative ale bateriei. Asigurati-va ca polaritatea este corecta in timpul instalarii.
Warning	Conectarea incorecta a cablului de comunicatie va determina functionarea neasteptata a sistemului bateriei, ceea ce poate duce la defectarea sistemului.



NOTA!

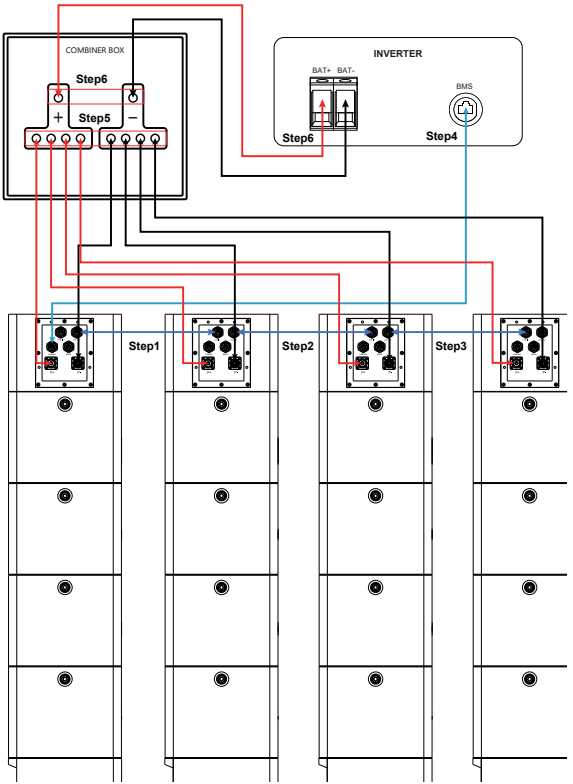
Metoda de cablare cu o baterie.



NOTA!

Metoda de cablare cu 2 pana la 5 baterii.

Atunci cand se utilizeaza un invertor de 10 kW sau mai mare, porturile pozitive si negative ale fiecarei baterii trebuie conectate la "combiner box" conform metodei de cablare prezentate in figura de mai jos.
Pentru a asigura un flux de curent egal, lungimea celor doua linii de conectare a polilor pozitivi si negativi trebuie sa fie aceeasi.



3 Intretinere

• Cerinte de reincarcare in timpul depozitarii normale
Bateria trebuie depozitata intr-un mediu cu temperatura cuprinsa intre -10 °C si +45 °C si intretinuta regulat conform tabelului urmator, cu un curent de 0,5 C pana la 50 % Nivelul bateriei dupa o perioada lunga de depozitare.

Temperatura mediului de depozitare	Umiditatea relativ a mediului de depozitare	Durata de depozitare	Nivelul bateriei
Sub - 10°C	/	Interzis	/
-10 ~ 25°C	5%-70%	≤12 luni	Nivelul bateriei≥60%
-25 ~ 35°C	5%-70%	≤6 luni	Nivelul bateriei≥60%
35 ~ 45°C	5%-70%	≤3 luni	Nivelul bateriei≥60%
Peste 45°C	/	Interzis	/

• Cerinte de reincarcare in cazul descarcarii excesive
Bateria descarcata excesiv (90% DOD) trebuie reincarcata conform tabelului urmator, in caz contrar bateria descarcata excesiv se va deteriora.

Temperatura mediului de depozitare	Durata de depozitare	Nota
-10 ~ 25°C	≤15 days	Bateria deconectata de la invertor
-25 ~ 35°C	≤7 days	
35 ~ 45°C	≤12 hours	Bateria conectata la invertor



Dezafectarea echipamentelor electrice si electronice vechi

(Se aplica pentru ţarile membre ale Uniunii Europene si pentru alte tari europene cu sisteme de colectare separata)

Acest simbol aplicat pe produs sau pe ambalajul acestuia indica faptul ca acest produs nu trebuie tratat ca pe un deseu menajer.

El trebuie predat punctelor de reciclare a echipamentelor electrice si electronice.

Asigurandu-va ca acest produs este dezafectat in mod corect, veţi ajuta la prevenirea posibilelor consecinte negative asupra mediului si a sanatatii umane, care ar fi putut surveni daca produsul ar fi fost dezafectat in mod necorespunzator.

Reciclarea materialelor va ajuta la conservarea resurselor naturale.

