

INTEG **E** STORAGE RACK

Air-cooling Energy Storage Rack

E2BR-S64/80/96/112K-R



User Manual

ENGLISH VERSION



Declaration

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Scope of Application

This manual mainly introduces the safety instructions, product introduction, transport, storage, installation, electrical connection, operation, maintenance and troubleshooting of Solinteg air-cooling energy storage rack series (hereinafter referred to as "energy storage rack"). Please read this manual carefully before installing the equipment.

This document applies to the following models: E2BR-S64K-R, E2BR-S80K-R, E2BR-S96K-R, E2BR-S112K-R.

Model	E2BR-S64K-R	E2BR-S80K-R	E2BR-S96K-R	E2BR-S112K-R
System energy (kWh)	64.3	80.3	96.4	112.5
System usable energy (kWh)	57.87	72.27	86.76	101.25
Ingress protection	IP20			
Dimensions(W×H×D mm)	1034*1245*827			
Weight(kg)	605	717	830	942

Target Group

This instruction manual is intended for specialised technicians who install, operate and maintain energy storage rack. The following qualifications are required for the operator:

- ① Some knowledge of electrical and cabling as well as mechanical knowledge and familiarity with energy storage systems and their operating principles.
- ② Specialised training in the installation and commissioning of electrical equipment.
- ③ Be familiar with local national/local electrical standards and regulations.
- ④ Obtain locally recognised installation and operation certificates.
- ⑤ Only personnel meeting the above requirements may perform installation, maintenance and troubleshooting. Unauthorised personnel must not perform any operations on the equipment.

Explanation of Symbols

This manual contains important safety and operating instructions that must be accurately understood and followed during installation and maintenance of the equipment. To ensure the most accurate use of this manual, please note the following symbol descriptions.



Indicates a danger with a high level of risk of death or serious injury if not avoided.



Indicates a danger with a medium level of risk of death or serious injury if not avoided.



Indicates a danger with a low level of risk that could result in minor or moderate injury if not avoided.



Supplementary explanations to key information in the text to help the user use the equipment more efficiently.
"Notice" are not safety warnings and do not relate to personal, equipment or environmental injuries.

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1 Safety Instructions

1.1 Statement

Before transporting, storing, installing, operating, using and maintaining the equipment, please read this manual carefully, fully understand and strictly follow the contents of the manual, and follow the markings on the equipment and all the safety precautions in the manual.

Under any of the following circumstances, Solinteg reserves the right not to assume responsibility for quality assurance:

- ① Damages caused by improper transportation.
- ② Damages caused by incorrect storage, installation or use.
- ③ Damages caused by installation and use of equipment by non-professionals or untrained personnel.
- ④ Damages caused by failure to comply with the instructions and safety warnings in this document.
- ⑤ Damages of running in an environment that does not meet the requirements stated in this document.
- ⑥ Damages caused by operation beyond the parameters specified in applicable technical specifications.
- ⑦ Damages caused by unauthorized disassembly, alteration of products or modification of software codes.
- ⑧ Damages caused by unauthorized opening of the equipment's cover and disassembling or replacing internal components.
- ⑨ Damages caused by abnormal natural environment (force majeure, such as lightning, earthquake, fire, storm, etc.).
- ⑩ Any damages caused by the process of installation and operation which don't follow the local standards and regulations.
- ⑪ Products that have exceeded the warranty period.

1.2 Personal Safety

In order to avoid damage to the equipment or personal injury or death caused by improper operation, please read carefully the following instructions on installation precautions before carrying out the relevant work.

- ① The installer must be professionally trained or obtain electrical related professional qualifications.
- ② It is strictly prohibited to wear watches, bracelets, bangles, rings, necklaces and other easily conductive objects during installation and operation, so as to avoid being burned by electric shock.

- ③ It is strictly prohibited to operate with electricity during installation. When removing and installing cables, the sparks and pulling arcs generated by the electrified operation can cause fire or personal injury.
- ④ During installation and operation, the installer should wear professional protective gear.
- ⑤ If you need to use a ladder during the installation process, it is prohibited to use a ladder. If electrical operation is involved, a wooden ladder or insulated ladder should be selected.
- ⑥ Before operation, make sure that the cabinet has been firmly fixed to avoid tilting and collapsing due to unstable centre of gravity of the cabinet, which may lead to injuries and equipment damage.
- ⑦ Please install the equipment in a place out of reach of children and small animals.
- ⑧ The equipment must not be used in the following scenarios when in a state of back up:
 - a. Medical equipment, etc. that is directly related to life.
 - b. Equipment or precision instruments that may malfunction or be damaged due to power failure or power fluctuation.

1.3 Electrical Safety

- ① Please regulate the operation strictly in accordance with the contents of the instruction manual.
- ② Please make electrical connections in strict compliance with local regulatory requirements.
- ③ When installing the equipment, please disconnect the power supply first and prohibit operation with electricity.
- ④ Before installing the equipment, install the equipment grounding protection wire. When removing the equipment, remove the grounding wire last.
- ⑤ Select the cable specification in accordance with local regulations and the instruction manual.
- ⑥ When installing the equipment, connect the cables securely and tighten the terminal screws.
- ⑦ If the cable is damaged, it must be replaced by a professional to avoid risks.
- ⑧ Disconnect the power supply before wiring the power cord and communication cable, and prohibit operation with electricity.
- ⑨ When installing, do not open the installation cover inside the energy storage cabinet. Except for terminal wiring (as described in this manual), unauthorised opening of the cover and replacement of internal components may result in personal injury, equipment damage, and voiding of warranty.
- ⑩ When performing lithium battery terminal wiring, disconnect the circuit breaker or air switch first to avoid injury to personnel when the lithium battery is under high voltage.

1.4 Installation Requirements

- ① Before installation, please carefully check the number of parts of the equipment, as well as the number of tools and materials required to avoid missing, and check the number of installed parts and tools again after installation to ensure that the installation is complete, to avoid tools left inside the equipment. Except for the optional parts, all parts of the equipment should be installed in accordance with the requirements of the completion of the installation.
- ② Drilling holes in the equipment without permission is prohibited to avoid damaging the performance of the equipment.
- ③ The equipment should be placed in a well-ventilated area and away from other heat sources to ensure the normal operation of the equipment cooling system.
- ④ During the operation of the equipment, please ensure that the ventilation openings and the heat dissipation system are kept clear and avoid any obstruction to avoid the accumulation of high temperature which may cause injury to the equipment or lead to fire.
- ⑤ Please do not open the cabinet door in rainy or high humidity weather, if you have to open the cabinet door in special circumstances, please take protective measures.
- ⑥ It is strictly prohibited to place the equipment in a low-lying area, and should be kept away from drainage outlets, air-conditioning outlets, vents and other locations that are prone to water leakage, in order to prevent liquids from entering the interior of the equipment and causing equipment failure and damage.

1.5 Battery Safety

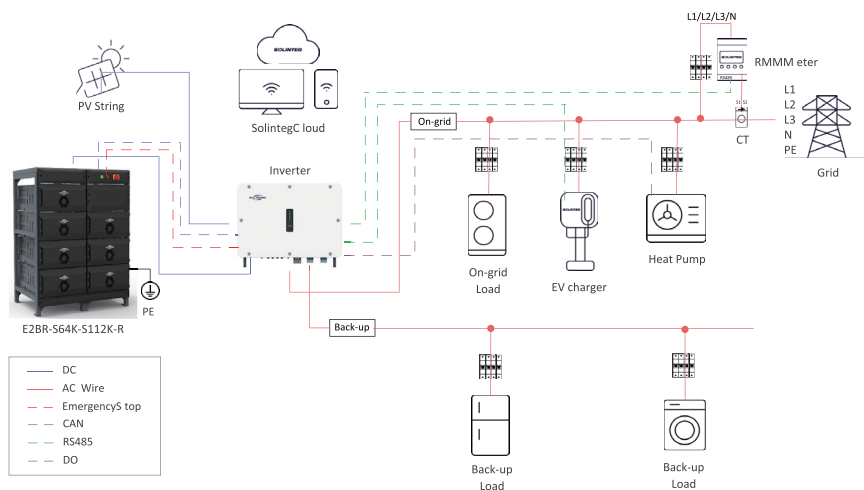
- ① Carefully check the positive and negative poles of the battery, and it is strictly prohibited to short-circuit the positive and negative poles of the battery. Otherwise, it will cause a short circuit of the battery, generate huge current and a lot of heat, and lead to battery leakage, smoke, release of flammable gas, thermal runaway, fire or explosion.
- ② It is strictly prohibited to maintain the battery under charged condition.
- ③ It is strictly prohibited to step on the battery, lean on it, and prohibit people or equipment from squeezing the battery.
- ④ It is strictly prohibited to place the battery in a high temperature and high humidity environment, please ensure good ventilation, unobstructed heat dissipation, and avoid any shielding to avoid high temperature accumulation causing equipment injury or fire.
- ⑤ It is strictly prohibited to disassemble, modify, vibrate, drop, collide, crush, puncture with sharp objects, pressure shock or damage the battery, otherwise it will result in liquid leakage, smoke, release of flammable gas, thermal runaway, fire or explosion.
- ⑥ It is strictly prohibited to carry out welding, grinding and other work around the battery to avoid fire and other disasters caused by electric sparks or arcs generated during the operation.

- ⑦ It is strictly prohibited to mix different models or brands of batteries.
- ⑧ It is strictly prohibited to use used or damaged batteries.
- ⑨ Before operating the battery, please check whether there is irritating, burning and other odours around the battery.
- ⑩ Batteries must be maintained and handled by professional personnel, and wear safety protective gear (including but not limited to goggles, rubber gloves, gas masks, protective clothing) in accordance with local requirements.
- ⑪ When the battery is damaged due to puncture, impact, extrusion, external heat, overshooting, etc., it may result in thermal runaway, liquid leakage, or the generation of toxic and flammable gases. To ensure safety, prevent fire, and ensure personal safety and avoid equipment damage, appropriate safety measures must be taken on site in accordance with local requirements.
- ⑫ When installing and commissioning the battery, it must be in accordance with local laws, regulations and norms, and be equipped with fire protection facilities.
- ⑬ During the storage and transport of the battery, it must be ensured that the outer packing box is intact and undamaged. When placing or stacking the batteries, they must be placed correctly according to the box markings, and it is strictly prohibited to place them upside down, sideways, standing up, or tilted to avoid damage or scrapping of the batteries due to any impact or fall.
- ⑭ The equipment should be inspected regularly to avoid loosening, rusting, corrosion, or other foreign objects entering. If any of the above conditions occurs, it must be dealt with in time to avoid excessive connection voltage drop due to false connection of screws, which may lead to large amount of heat generation and burning of the battery when the current is high.
- ⑮ After the battery is discharged, the battery should be charged in time to avoid damage to the battery due to over-discharge; when the battery is stored for more than six months, it must be inspected and tested by professional personnel.
- ⑯ Prohibit charging when the ambient temperature is lower than the lower limit of the working temperature.
- ⑰ When the battery is swollen and bulging, and the shell is dented or broken, please stop using it immediately and contact the installer or professional operation and maintenance personnel to remove and replace it. Damaged batteries should be kept away from other equipment or flammable and explosive materials, and non-professionals should stay away.

2 Products Introduction

2.1 Product Description

This schematic is applicable to Solinteg air-cooling energy storage rack series. The energy storage rack combines a large-capacity battery and a high-voltage box into a complete set of energy storage systems that are easy to install, easy to expand, and intelligent together with the inverter. It can be widely used in different industrial and commercial scenarios.



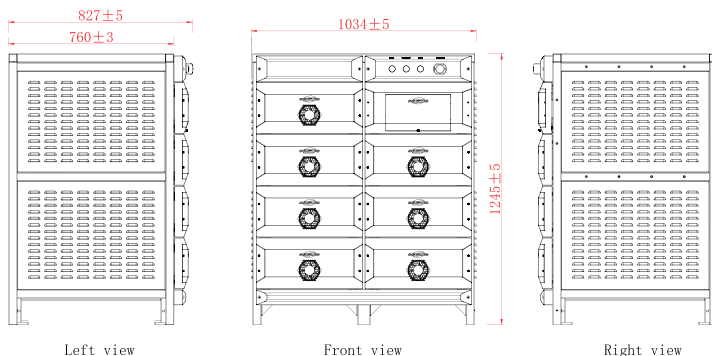
Product system diagram

System main equipment table

Model	Description
Energy storage rack (E2BR-S64/80/96/112k-R)	The energy storage rack can store electrical energy and provide stable backup power.
Hybrid inverter	Solinteg hybrid inverter, which can realise DC-AC electric energy conversion, and electric energy management.
Solinteg cloud	An intelligent, multi-functional monitoring platform that can be accessed remotely. View relevant data at any time.
Load/Heat pump	The system supports intelligent control of SG Ready heat pumps, which can be configured by users according to their own conditions.

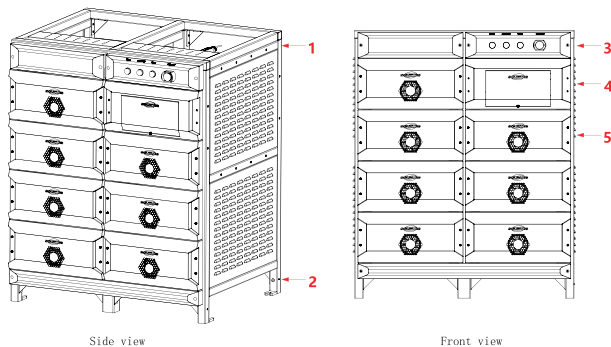
2.2 Appearance Dimensions

Dimensions of the energy storage rack: W*D*H - 1050*1140*2262mm. The rack appearance and dimension drawing are shown below:



Rack appearance and dimension

2.3 Product Components



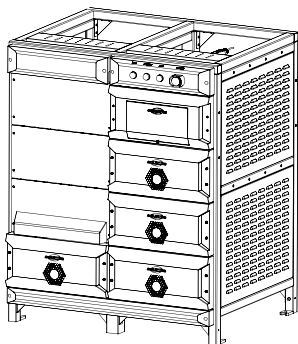
Product components

The part number, name and description are shown in the table below:

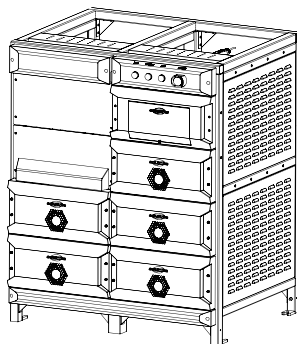
No	Name	Description
1	Installation rack	For energy storage rack battery installation and fixing
2	Grounding terminal	For rack enclosure protection grounding
3	Rack panel	Rack operation status display and emergency stop control
4	High voltage box (Main controller)	Battery information collection and energy storage control
5	Battery pack	Electrical energy storage unit

▼ 2.3.1 Rack Installation

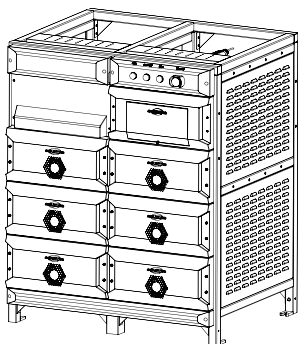
For energy storage racks, the correspondence between their specification models and battery pack arrangement modes is as follows.



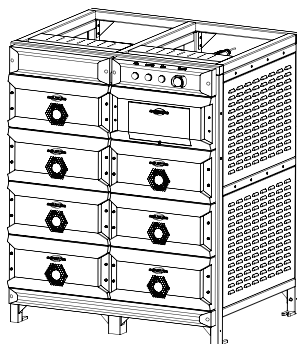
E2BR-S64K-R



E2BR-S80K-R



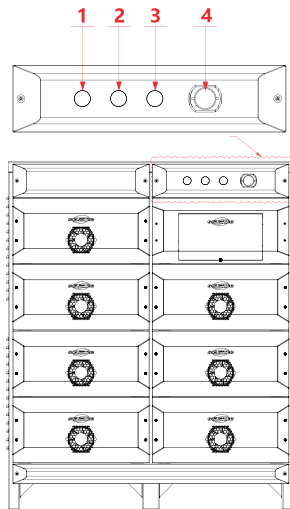
E2BR-S96K-R



E2BR-S112K-R

Schematic diagram of the rack

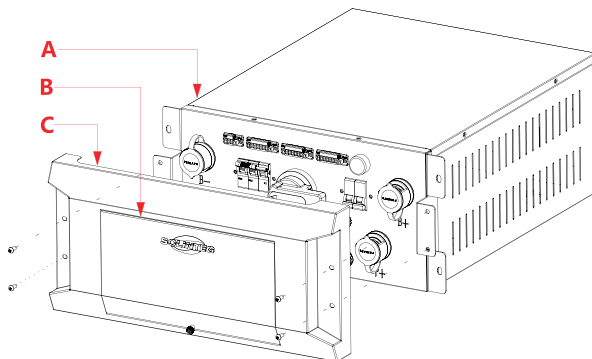
▼ 2.3.2 Rack Panel



The part number, name and description are shown in the table below:

No	Name
1	Power indicator (White)
2	Operation indicator (Green)
3	Fault indicator (Red)
4	Emergency stop button

▼ 2.3.3 High Voltage Box

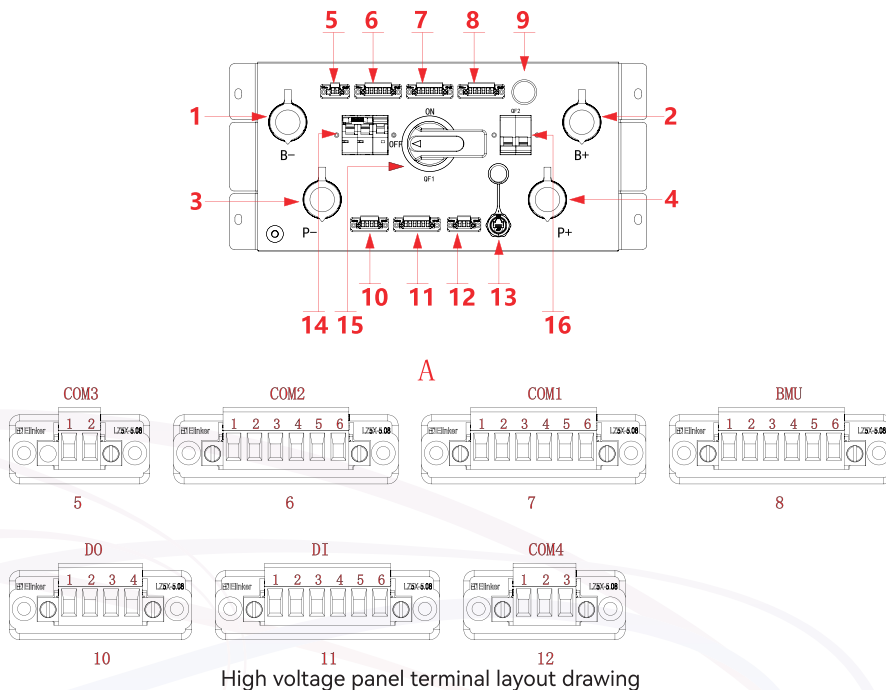


The part number, name and description are shown in the table below:

No	Name
A	High voltage box (Main controller)
B	High voltage operation window
C	Mounting cover

High voltage box Parameters

NO	Item	Technical Specification
1	Power supply voltage	500W AC220V
2	Operating voltage range	DC120~430V
3	Max.Chagre/discharge current	250A
4	Communication	RS485/CAN/LAN
5	Dimension(w*h*d)	420*510*220mm
6	Weight	25kg
7	Protection degree	IP20
8	Operation temp.Range	-30~65° C



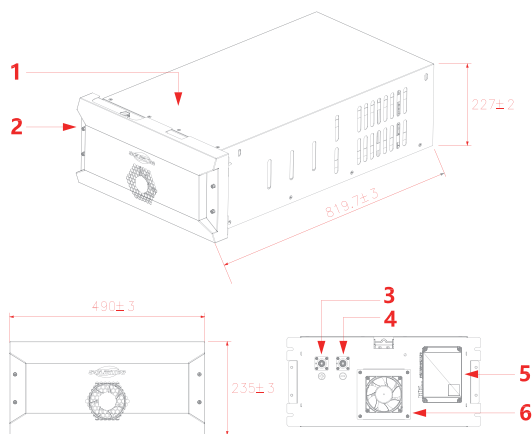
The part numbers, names and functions are listed in the table below:

No	Mark	Definition	Description
1	B-	B-	Connect the negative terminal of the battery pack
2	B+	B+	Connect the positive terminal of the battery pack
3	P-	P-	Connect the negative terminal of the inverter
4	P+	P+	Connect the positive terminal of the inverter
5	COM3	COM3-1: DC24V+	DC24V fan power supply: battery pack fan power supply
		COM3-2: DC24V-	
6	COM2	COM2-1: RS485A	Reserved
		COM2-2: RS485B	
		COM2-3: RS485A	Communication module interface
		COM2-4: RS485B	
		COM2-5: RS485A	Reserved
		COM2-6: RS485B	
7	COM1	COM1-1: DC24V+	DC24V BA power supply
		COM1-2: DC24V-	
		COM1-3: CAN-H	Reserved
		COM1-4: CAN-L	
		COM1-5: CAN-H	Inverter communication CAN port
		COM1-6: CAN-L	
8	BMU	BMU-1: DC24V+	DC24V BMU
		BMU-2: DC24V-	DC24V BMU power supply
		BMU-3: ADD SET	BMU address set
		BMU-4: /	/
		BMU-5: CAN-H	BUM CAN port
		BMU-6: CAN-L	
9	HR		High voltage box fault indicator
10	DO	DO-1: NO1	Operation signal output (Opeparation indicator)
		DO-2: COM1	
		DO-3: NO2	Fault signal output (Fault signal indicator)
		DO-4: COM2	
11	DI	DI-1	Signal input common port
		DI-2	Reserved
		DI-3	Reserved

No	Mark	Definition	Description
11	DI	DI-4	Reserved
		DI-5	Reserved
		DI-6	Emergency stop button signal input
13	LAN		Communication between BCU and BAMS
14	QF3		Controller DC power breaker
15	QF1		Controller main control switch
16	QF2		Controller AC power breaker

It can be connected to an external AC 220V 500W AC power supply to provide backup control power for the high voltage box. It is recommended that the backup power supply be taken from the backup side of the inverter to ensure stable power supply.

▼ 2.3.4 Battery Pack



Battery pack appearance

The part number, name and description are shown in the table below:

No	Name
1	Battery pack
2	Mouting cover
3	Battery positive terminal
4	Battery negative terminal
5	BMU
6	Fan

Battery pack parameters

No	Item	Technical specification	Remarks
1	Cell type	MB31	
2	Nominal capacity	314Ah	Cell standard charging and discharging process
3	Nominal voltage	51.2V	Cell 3.2 V
4	Nominal energy	16.076kWh	Standard charging and discharging process of cell
5	Standard charging power	0.5P	
6	Standard discharge power	0.5P	
7	Equalising function	Passive equalisation	
8	Thermal management mode	Forced air cooling	
9	Operating temperature range	Discharge: -20~50°C Charge: 0 ~ 50°C	
10	Storage temperature	-20~45° C	
11	Fire protection function	Built-in aerosol module	
12	Operating humidity	5%- 95% RH	
13	Storage environment requirements	Short-term less than one month	-30°C ~+55°C , 90%RH Max
		More than 3 months	-10°C ~+45°C , 90%RH Max
		Recommended storage	10°C ~+30°C , 85%RH Max
14	Evel of production	IP20	
15	Weight	114±5kg	Front panel included
16	Size	D791.5±3*w487±2*h227±2mm	Excluding front panel
		D819.7±3*W490±3*H235±3mm	Including front panel
17	Application altitude	3000m	> 3000m It needs to be derated
18	Box	SGCC	
19	Front panel	SPCC	

3 Transport and Storage

3.1 Unpacking

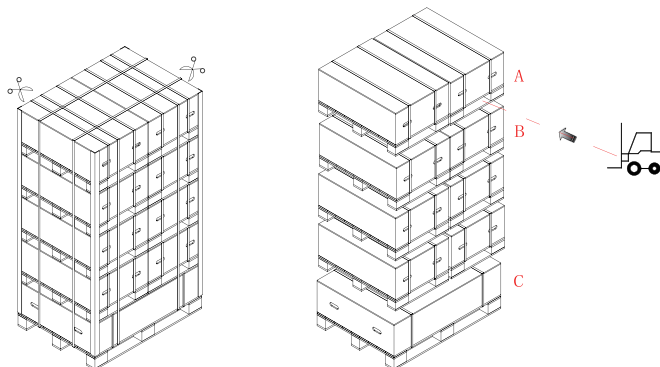


NOTICE

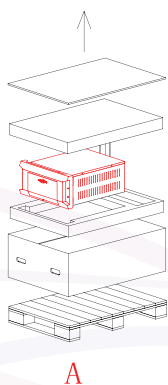
Please carefully inspect the outer packing box before receiving the goods, and then unpack after confirming that the outer packing box is in good condition, if you find that the outer packaging is damaged, please contact the dealer immediately.

Please prepare 1 pair of scissors and gloves and other protective equipment according to the unpacking requirements.

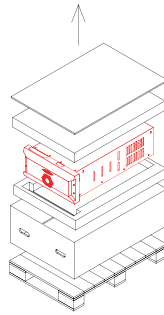
- ① Use scissors to cut the packing belt then use a forklift to unload the packing boxes.



- ② Open the cover of the carton and take out the installation accessories of the high voltage box.

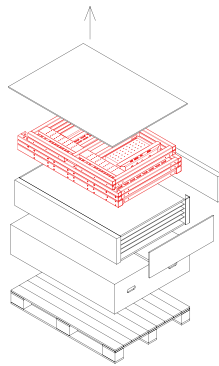


- ③ Open the cover of the packaging carton and take out the battery pack and its installation accessories in turn.



B

- ④ Open the cover of the packaging carton and take out the installation rack in turn.



C

3.2 Transport Requirements



DANGER

When transporting the equipment, appropriate protective measures should be applied to prevent water ingress into the equipment, avoid collisions and prohibit placing the equipment upside down. Otherwise, it may lead to equipment damage or even cause fire and explosion accidents.

Before transport, please check the product packaging carefully, such as damage, odour, liquid leakage and other abnormalities, it is strictly prohibited to transport the goods, otherwise it may lead to equipment damage, or even cause fire and explosion accidents.



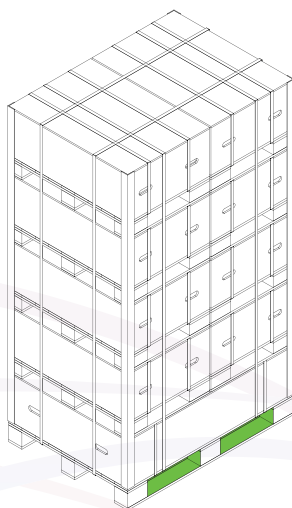
Please pay attention to the warning signs on the outer packing box and body, operate strictly according to the requirements and comply with the transport requirements.

During transport and handling, protective measures should be applied to avoid Noticeping of the fuselage, and the tilt angle of the fuselage needs to be $\leq 10^\circ$.

Suitable mode of transport should be selected according to the condition of the equipment, and necessary protective measures should be taken during transport.

The transport service provider must have a dangerous goods transport licence and strictly abide by the regulations of the corresponding region on the transport of dangerous goods.

1. It must be ensured that the forklift meets the load-bearing requirements, and the load-bearing capacity $\geq 1.2t$.
 2. There must be professionals on hand to supervise the operation to ensure the safety of the operation.
 3. When handling, you must pay attention to the position of the center of gravity of the equipment, and use ropes and other tools to fix it to prevent the equipment from tipping.
 4. According to the forklift hole operation, please refer to the following figure for the forklift hole position:
- Forklift empty space:



3.3 Storage

1. When storing for a long time, do not remove the original packaging, and check the outer packaging regularly.
2. Please store the equipment in strict accordance with the warning signs and other information on the package to avoid damage to the equipment.
3. Equipment storage temperature range: -20~45 °C.
4. Equipment storage relative humidity range: 5%-95%RH.

Refer to the following table to select an appropriate storage environment based on the storage time of the device:

Storage time	Storage temperature	Storage relative humidity
Short-term less than a month	-20°C~+45°C	90%RH Max
More than 3 months	-10°C~+45°C	90%RH Max
Recommended storage	10°C~+30°C	85%RH Max



NOTICE

As batteries are already installed in the cabinet, battery storage requirements must also be observed when storing the device.



DANGER

Batteries need to be stored indoors. The storage area must meet the following requirements: 1. protected from direct sunlight or rain. 2. dry and ventilated. 3. away from heat and ignition sources. 4. free from radiation. 5. chemically safe. 6. protected from dust and metal-conductive dust. 7. equipped with fire protection facilities.

Battery storage should be in strict accordance with the warning signs and other information on the packaging.

Battery storage should avoid mixing with other electronic equipment, chemicals, or other items that may cause interference or danger.

Reasonable arrangement of the stacking height of the batteries, to avoid the bottom layer of batteries under pressure deformation or damage.



WARNING

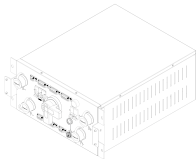
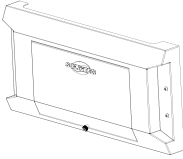
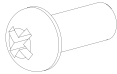
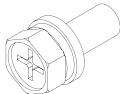







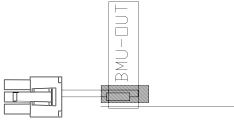

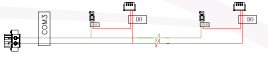
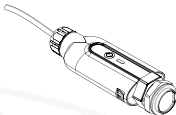
Long-term storage of batteries is not recommended. If there are special circumstances that require long term storage, please recharge the batteries regularly to avoid damage to the batteries.

If the battery has been stored for more than six months, it must be inspected and tested by a professional before use.

3.4 Packing List

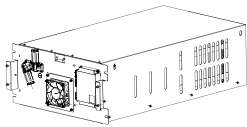
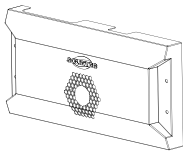

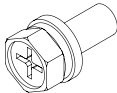


Please make sure that the energy storage rack is in good condition during transportation. In case of any visible damage, please contact the distributor or Solinteg. After unboxing, check all accessories against the checklist below:

A.High voltage box packing list

 <p style="text-align: center;">A-01</p>	 <p style="text-align: center;">A-02</p>	 <p style="text-align: center;">B-03</p>
 <p style="text-align: center;">B-04</p>	 <p style="text-align: center;">A-05 5000mm</p>	 <p style="text-align: center;">A-06 5000mm</p>
 <p style="text-align: center;">A-07 1950mm</p>	 <p style="text-align: center;">A-08 260mm</p>	 <p style="text-align: center;">A-09 820mm</p>
 <p style="text-align: center;">A-10 830mm</p>	 <p style="text-align: center;">A-11 1000mm</p>	 <p style="text-align: center;">A-12 EMU-OUT</p>
 <p style="text-align: center;">PE A-13</p>	 <p style="text-align: center;">A-14</p>	 <p style="text-align: center;">A-15</p>

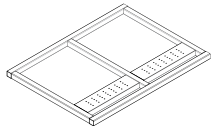
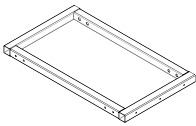
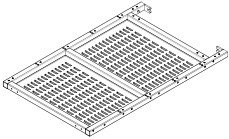
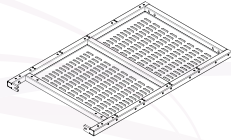
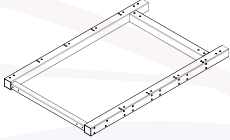
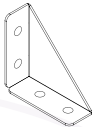
No	Item	Specification	Quantity
A-01	High voltage box	E2BR-C16K	1PCS
A-02	High voltage box cover	/	1PCS
B-03	M5*12 cross-recessed screw	M5-12	4PCS
B-04	M6*16 hex screw	M6*16	4PCS
A-05	Battery cable P+	5m	1PCS
A-06	Battery cable P-	5m	1PCS
A-07	Battery cable B+		1PCS
A-08	Battery cable B-		1PCS
A-09	Battery jumper cable		1PCS
A-10	Battery communication jumper cable		1PCS
A-11	Communication cable		1PCS
A-12	Communication terminal wire		1PCS
A-13	PE cable		1PCS
A-14	Fan power cord		1PCS
A-15	Communication module		1PCS

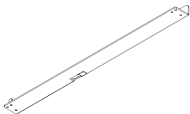
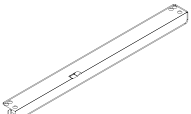

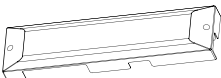

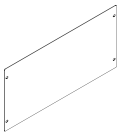
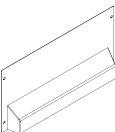
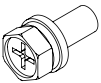



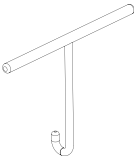

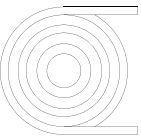



B. Battery pack list

 B-01	 B-02	 B-03
 B-04	 260mm B-05	 310m B-06

No	Item	Specification	Quantity
B-01	Battery pack	E2BR-B16K	1PCS
B-02	Battery pack cover	/	1PCS
B-03	M5*12 cross-recessed screw	M5-12	4PCS
B-04	M6*16 hex Screw	M6*16	4PCS
B-05	Battery cable		1PCS
B-06	Communication cable		1PCS

C. Installation rack packing list

 C-01	 C-02	 C-03
 C-04	 C-05	 C-06

 <p>C-07</p>	 <p>C-08</p>	 <p>C-09</p>
 <p>C-10</p>	 <p>C-11</p>	 <p>C-12</p>
 <p>C-13</p>	 <p>C-14</p>	 <p>C-15</p>
 <p>C-16</p>	 <p>C-17</p>	 <p>C-18</p>
 <p>C-19</p>	 <p>C-20</p>	 <p>C-21</p>
 <p>C-22</p>	 <p>C-23</p>	

No	Item	Specification	Quantity
C-01	Top frame	1020mm*760mm*40mm	1PCS
C-02	Bottom frame	439mm*760mm*40mm	2PCS
C-03	Left frame	1205mm*760mm*40mm	1PCS
C-04	Right frame	1205mm*760mm*40mm	1PCS
C-05	Middle frame	1205mm*760mm*60mm	1PCS
C-06	Corner connection code	80mm*80mm*30mm	12PCS
C-07	Left-hand side rail	756mm*60mm*41mm	8PCS
C-08	Right-hand side rail	756mm*60mm*41mm	8PCS
C-09	Control board cover	490mm*120mm*55mm	1PCS
C-10	Blank space cover	490mm*120mm*55mm	1PCS
C-11	Wire trough cover	990mm*70mm*55mm	1PCS
C-12	Cover plate 01	490mm*235mm	2PCS
C-13	Cover plate 02	490mm*235mm*45mm	1PCS
C-14	M6*16 hex screw	M6*16	64PCS
C-15	M6*25 Hex socket cap screw	M6*25	30PCS
C-16	M6*16 Hex socket countersunk screw	M6-16	96PCS
C-17	M8*100 expansion bolt	M8*100	4PCS
C-18	Pack lifting hook		1PCS
C-19	Inverter emergency stop Cable		1PCS
C-20	Battery communication cable		1PCS
C-21	Mushroom head cable tie		20PCS
C-22	Cable tie		30PCS
C-23	User manual		1PCS

4 Mechanical Installation

4.1 Installation Requirements

▼ 4.1.1 Installation Site Requirements

Please combine the product system requirements, local fire and laws and regulations, choose the installation location that meets the requirements.

1. The installation location of this equipment must meet the following requirements:
2. Local laws and regulations and electric power related standards and regulations should be strictly followed.
3. The installation location should meet the requirements of local fire codes and be equipped with fire-fighting equipment and water fire-fighting system interface.
4. The installation area should avoid bad soil quality such as deformation and settlement easily, and keep away from corrosive pollution areas such as salt and alkali.

▼ 4.1.2 Equipment Basic Requirements

The total weight of the equipment is about 1t, users need to select the site for construction according to the local seismic design code and geological conditions, and the load bearing of the foundation should meet the needs of the equipment and installation personnel. The foundation material should be concrete, solid brick or steel, etc. The bottom of the foundation must be tamped and filled, flat (horizontal error $\leq 3\text{mm}$, tilt angle $\leq 3^\circ$), the installation area is prohibited to have depression, tilting situation.

▼ 4.1.3 Installation Environment Requirement

1. The distance between the equipment installation area and the residential, densely populated social public places and production buildings should comply with local fire codes and standards, and when the safety distance requirements cannot be met, a firewall in line with local fire protection codes can be added between the equipment and adjacent buildings. It is also advisable to install a locking fence around the area where the equipment is installed to prevent intrusion.
2. The equipment installation area should be away from high-temperature environments such as heat sources and fire sources, from areas with flammable and explosive substances and dust, away from areas with corrosive substances and corrosive gases, away from areas with strong electromagnetic field interference, and away from strong vibration and strong noise sources.
3. The equipment installation area should also meet the following requirements:
Ambient temperature: $-20\sim 50^\circ\text{C}$ (Discharge: $-20\sim 50^\circ\text{C}$. Charge: $0\sim 50^\circ\text{C}$)

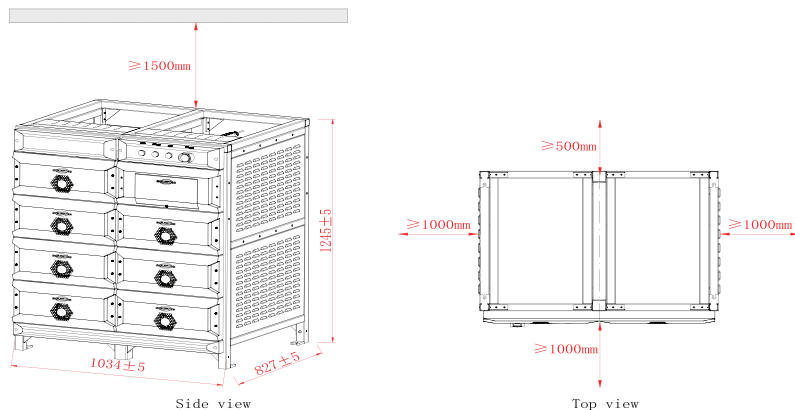
Relative humidity: 5%-95%RH

Altitude requirement: $\leq 3000\text{m}$

Name	Installation spacing (m)
Distance to coastal area	> 2000
Distance to smelters, coal mines, thermal power plants and other heavy pollution source areas	> 1500
Distance to medium pollution source areas such as chemical industry, rubber, electroplating, etc.	> 1000
Distance from lightly polluted areas such as foodstuffs, leather, heating boilers, slaughterhouses, centralised rubbish dumps, sewage treatment stations, etc.	> 500

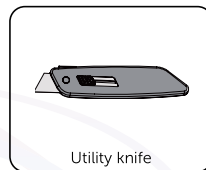
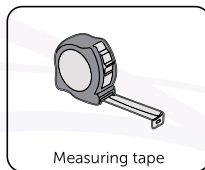
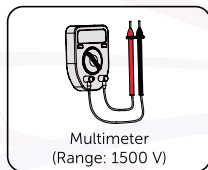
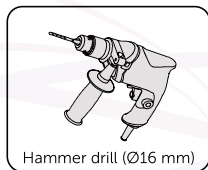
▼ 4.1.4 Installation Distance Requirement

When installing the energy storage rack, please follow the spacing requirements below.



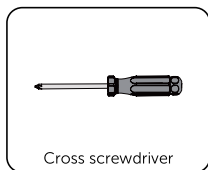
▼ 4.1.5 Installation Tool Requirements

The tools to be used include but are not limited to the following recommended tools. Please use other auxiliary tools according to the needs of the site. Please note that the tools used must comply with local code requirements.

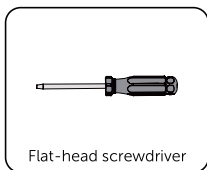




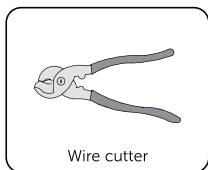
Marker



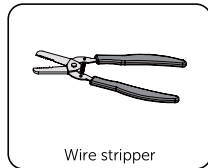
Cross screwdriver



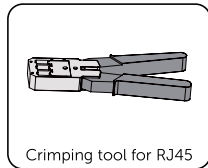
Flat-head screwdriver



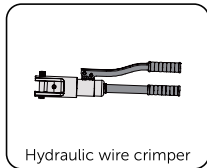
Wire cutter



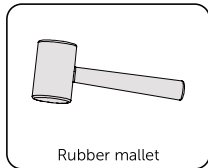
Wire stripper



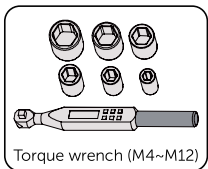
Crimping tool for RJ45



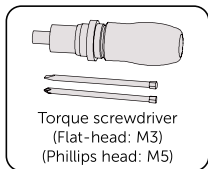
Hydraulic wire crimper



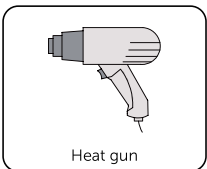
Rubber mallet



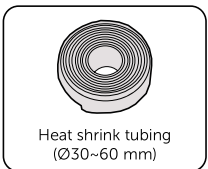
Torque wrench (M4~M12)



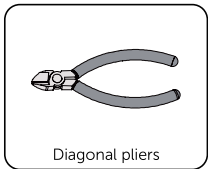
Torque screwdriver
(Flat-head: M3)
(Phillips head: M5)



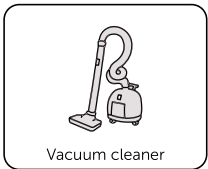
Heat gun



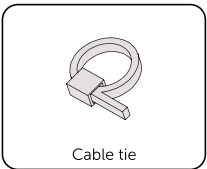
Heat shrink tubing
(Ø30~60 mm)



Diagonal pliers



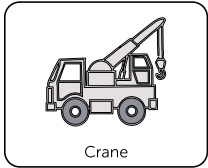
Vacuum cleaner



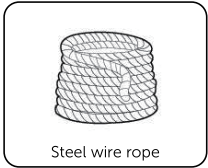
Cable tie



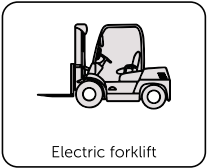
Insulated ladder



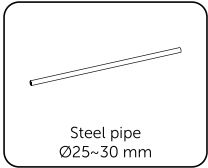
Crane



Steel wire rope



Electric forklift



Steel pipe
Ø25~30 mm



Insulating gloves



Safety boots



Safety goggles



Anti-dust mask



Safety vest



Safety helmet



Safety belt

▼ 4.1.6 Material Preparation

The following are other materials required for the installation of the energy storage rack, and the user shall provide his own according to the recommended specifications and site conditions.

No	Name	Recommended specification	Description
1	PE cable	Green&yellow PE cable-50mm ²	
2	PE OT terminal	SC50-8	
3	AC cable (BMS AC back up power)	3*1.5mm ²	Optional
4	Trunking	Users can choose according to the situation of the site	Laying cables
5	Plugging material	Users can choose according to the situation of the site	Plug the threading holes

4.2 Rack Installation

Please take out the mounting accessories and check the number of accessories before installation so that the installation will not be affected by missing accessories.



Before installing the equipment, wear personal safety protective equipment in accordance with the regulations.

During installation, the equipment must be shielded and protected to prevent debris from entering the equipment, and the equipment should be cleaned after the installation is completed.

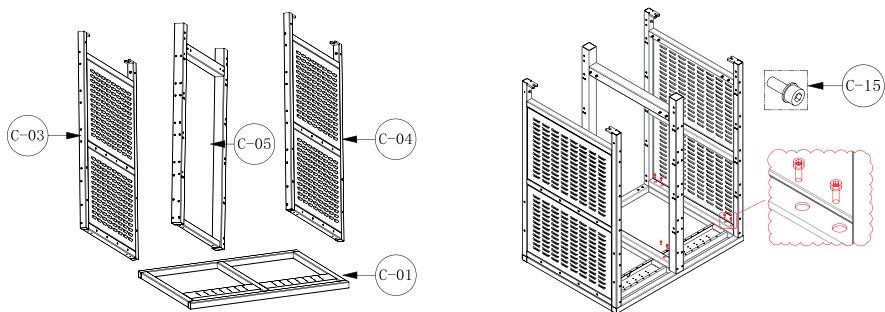
Before connecting the cables, please make sure that all power switches are disconnected, otherwise it may cause casualties or short circuit of the equipment.

The cable terminals must be locked tightly and ensure that they do not loosen after prolonged use, otherwise the equipment may be damaged. During the commissioning and operation of the equipment, please be sure to keep the rack grounded well, so as to avoid personal safety and equipment damage due to rack grounding failure.

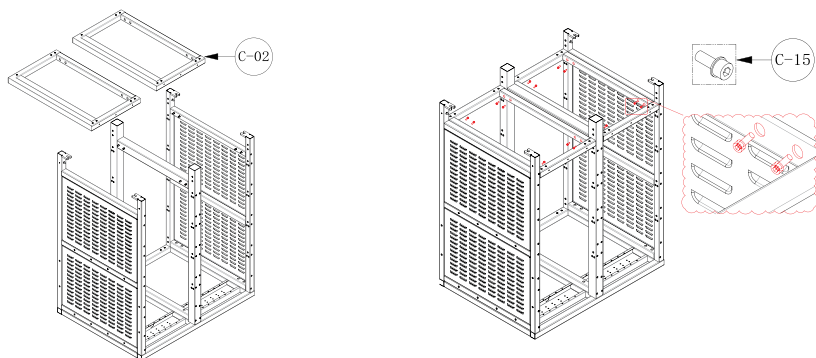
Before connecting the battery terminals, make sure that the positive and negative polarity of the cable is correct.

Unbox the energy storage rack according to "3.1" in this article and place the parts on the cardboard to prevent scratches on the coating. And follow the steps below to install:

1. Use M6*25 hexagon round head bolts (C-15) to connect and fix the left frame (C-03), right frame (C-04), middle frame (C-05) and the top frame (C-01) respectively.



2. Use M6*25 hexagon round head bolts (C-15) to connect and fix the bottom frame (C-02).



3. Use M6*16 hexagon bolts (C-14) to connect and fix the corner connection code (C-06).

