User Manual

BRE-B-14K

OLIPOWER ENERGY &AUTOMATION TECHNOLOGY

About This Document

Purpose

This document describes the BRE-B-14K in terms of its installation, electrical connections, commissioning, maintenance, and troubleshooting. Before installing and operating the BRE-B-14K, ensure that you are familiar with the features, functions, and safety precautions provided in this document.

Intended Audience

This document is intended for:

- Installers
- Users

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in serious injury or death.
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
NOTE	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, or environment deterioration.

Change History

Changes between document issues are cumulative. The latest document issue contains all updates made in previous issues.

Contents

1 Safety Precautions

General Safety

NOTICE

- Before performing operations, read through this manual and follow all the precautions to prevent accidents. The "DANGER" and "NOTICE" marks in this document do not represent all the safety instructions. They are only supplements to the safety instructions.
- Only certified electricians are allowed to install, connect cables for, commission, maintain, and troubleshoot OLiPower products, and they must understand basic safety precautions to avoid hazards.

When operating OLiPower equipment, in addition to following the general precautions in this document, follow the specific safety instructions given by OliPower. OLiPower will not be liable for any consequence caused by the violation of the safety operation regulations and design, production, and usage standards.

Disclaimer

OLiPower shall not be liable for any consequence caused by any of the following events:

- Transportation damage
- The storage conditions do not meet the requirements specified in this document.
- Incorrect storage, installation, or use
- Installation or use by unqualified personnel
- Failure to obey the operation instructions and safety precautions in this document
- Operation in extreme environments which are not covered in this document
- Operation beyond specified ranges.
- Unauthorized modifications to the product or software code or removal of the product
- Device damage due to force majeure (such as lightning, earthquake, fire, and storm)
- The warranty expires and the warranty service is not extended.
- Installation or use in environments which are not specified in related international standards

Personnel Requirements

Only certified electricians are allowed to install, connect cables for, commission, maintain, troubleshoot, and replace the BRE-B-14K.

- Operation personnel should receive professional training.
- Operation personnel should read through this document and follow all the precautions.
- Operation personnel should be familiar with the safety specifications about the electrical system.
- Operation personnel must wear proper personal protective equipment (PPE).

Protect Labels

- To protect the label from UV damage, BRE-B-14K can't be installed in locations of constant direct sunlight.
- Do not scrawl or damage any labels on the BRE-B-14K enclosure because these labels contain important information about safe operation.
- Do not scrawl or damage the nameplate on the BRE-B-14K enclosure because it contains important product information.

Installation

DANGER

Never operate the BRE-B-14K under power during installation.

- Ensure that the BRE-B-14K is not powered on before finishing installation.
- Ensure that the BRE-B-14K is installed in a well-ventilated environment.
- Ensure that the BRE-B-14K heat sinks are free from blockage.
- Do not open the front panel of the BRE-B-14K.
- Do not remove the terminals and ports at the bottom of the BRE-B-14K.

Electrical Connections

DANGER

Before connecting cables, ensure that the BRE-B-14K is secured in position and not damaged in any way. Otherwise, electric shocks or fire may occur.

- Ensure that all electrical connections comply with local electrical standards.
- Obtain approval from the local utility company before using the BRE-B-14K to generate electricity in grid-tied mode.

Operation

DANGER

High voltage may cause an electric shock, which results in serious injury, death, or serious property damage from the BRE-B-14Kin operation. Strictly comply with the safety precautions in this document and associated documents when operating the BRE-B-14K .

- When the BRE-B-14K is powered on for the first time, only certified electricians are allowed to perform quick setting. Incorrect settings may affect the normal BRE-B-14K operation and cause the BRE-B-14K to conflict with the country certification.
- When the BRE-B-14K is operating, do not disconnect under load.
- Do not touch an energized BRE-B-14K because the heat sink has a high temperature.
- Follow local laws and regulations when operating the equipment.

Maintenance and Replacement

DANGER

High voltage may cause an electric shock, which results in serious injury, death, or serious property damage from the BRE-B-14K in operation. Prior to maintenance, power off the BRE-B-14K and strictly comply with the safety precautions in this document and associated documents to operate the BRE-B-10K .

- Maintain the BRE-B-14K with sufficient knowledge of this document, proper tools, and testing equipment.
- Before performing maintenance tasks, power off the BRE-B-14Kand wait at least 5 minutes.
- Temporary warning signs or fences must be placed to prevent unauthorized people from entering the site.
- If the BRE-B-14K is faulty, contact your supplier.
- The BRE-B-14K can be powered on only after all faults are rectified. Failing to do so may escalate faults or damage the device.
- Observe ESD precautions and wear ESD gloves during maintenance.

Regular Maintenance

Items	Time
Cleaning case using soft cloth	Once 6 months
Cleaning ventilation hole using soft brush	Once a year
Discharge to SOH 50% when not to use in 3month	On demand
Fully charge discharge to SOH 25%	Once a year

Disposal

- The battery energy storage system must not be disposed of with domestic waste to fulfill the regulations and legal enquiry. The user has the responsibility and obligation to send it to the designated organization for recycling and disposal.

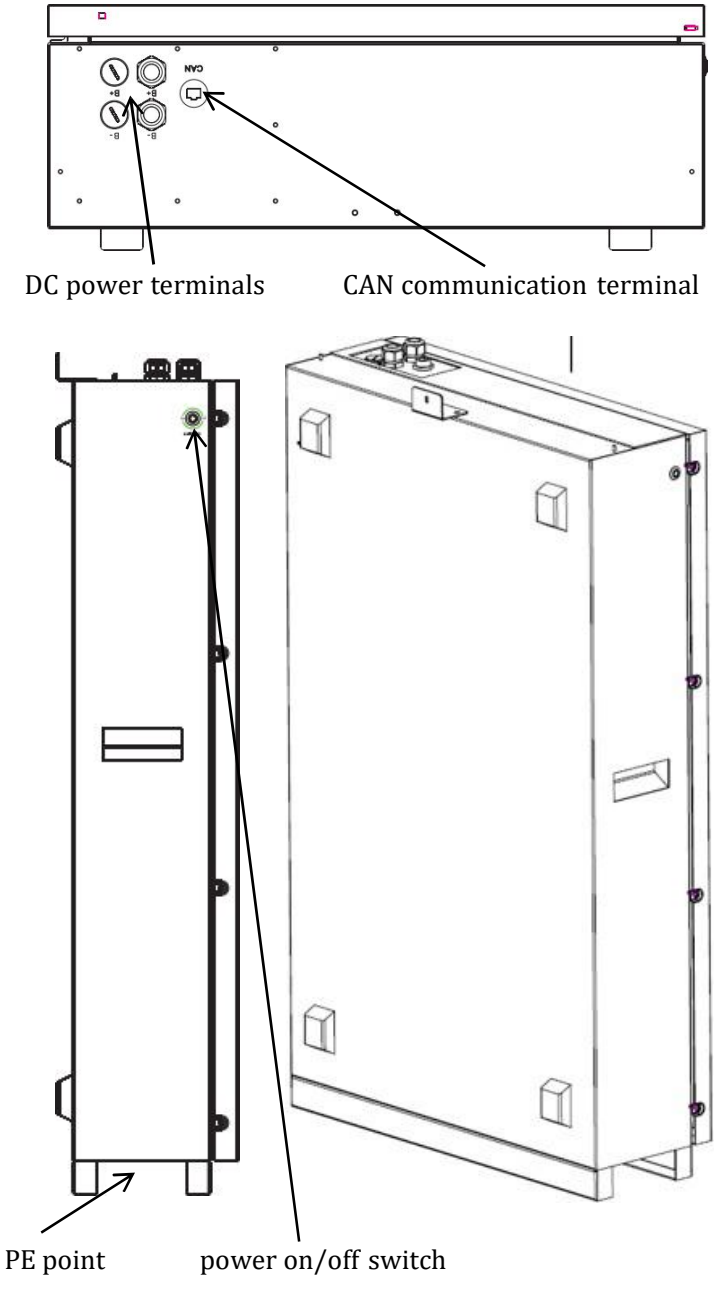
2 Product Overview

2.1. Product Introduction

Function

BRE-B-14K is a 48V energy storage system. Can be connected to a variety of specifications inverter.

Figure 2-1 Overview of BRE-B-14K



2.2. Label Description

Symbols

Table 2-3 Label description

Symbol	Name	Meaning
	Disposal information	BRE-B-14K cannot be disposed of together with the household waste. Disposal information can be found in the enclosed documentation.
	Burn warning	Do not touch a running BRE-B-14K because the shell is hot when the BRE-B-14K is running.

Symbol	Name	Meaning
	Refer to documentation	Reminds operators to refer to the documents shipped with the BRE-B-10K.
	Grounding	Indicates the position for connecting the protective earthing (PE) cable.
	Operation warning	Do not remove the connector or antennawhen the BRE-B-14K is running.
	BRE-B-10Kserial number (SN) label	Indicates the BRE-B-14K SN.

NOTE
The labels are for reference only.

3 Storage

The following requirements should be met when the BRE-B-14K needs to be stored prior to installation:

- Do not unpack the BRE-B-14K.
- Keep the storage temperature at -10°C to 45°C and the humidity at 5%–95% RH.
- The BRE-B-14K should be stored in a clean and dry place and be protected from dust and water vapor corrosion.
- A maximum of 2 BRE-B-14K s can be stacked. To avoid personal injury or device damage, stack BRE-B-14K s with caution to prevent them from falling over.
- Regular inspection is required during the storage. Replace the packing materials when necessary.
- After long-term storage, an inspection and test conducted by qualified persons are necessary before the BRE-B-14K is put into use.

4 System Installation

4.1. Checking Before Installation

Outer Packing Materials

Before unpacking the BRE-B-14K , check the outer packing materials for damage, such as holes and cracks, and check the BRE-B-14Kmodel. If any damage is found or the BRE-B-10Kmodel is not what you requested, do not unpack the package and contact your supplier as soon as possible.

NOTICE

You are advised to remove the packing materials within 24 hours before installing the BRE-B-14K .

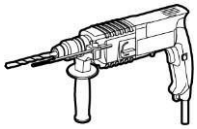
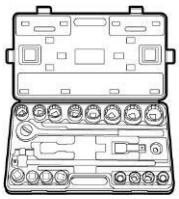
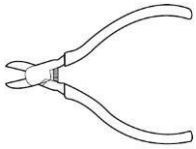
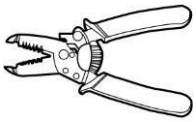
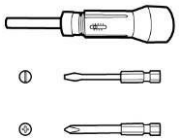
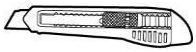
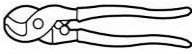
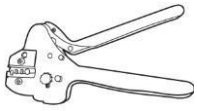
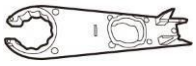
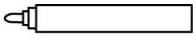
Package Contents

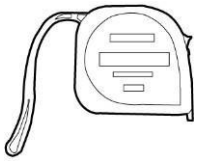
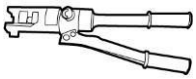
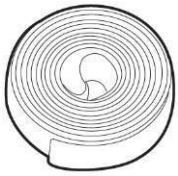
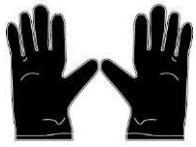
After unpacking the BRE-B-14K, check that the contents are intact and complete. If any damage is found or any component is missing, contact your supplier.

NOTE

For details about the number of contents, see the *Packing List* in the packing case.

4.2. Tools and Instruments

Category	Tools and Instruments		
Installation	 Hammer drill (with a Φ10 mm drill bit)	 Torque socket wrench (open end: 13 mm, applicable forM8 bolts; torque range: 0–15 N•m)	 Torque wrench (open end: 13 mm; torque range: 0–1.5N•m)
	 Diagonal pliers	 Wire stripper	 Torque screwdriver (head: M4 or M6; torque range: 0–5 N•m)
	 Rubber mallet	 Utility knife	 Cable cutter
	 Crimping tool (model: H4TC0001; manufacturer: Amphenol)	 Open-end wrench (model: H4TW0001; manufacturer: Amphenol)	 Cable tie
	 Vacuum cleaner	 Multimeter (DC voltage measurement range ≥ 600 V DC)	 Marker

Category	Tools and Instruments		
	 Measuring tape	 Bubble or digital level	 Hydraulic pliers
	 Heat shrink tubing	 Heat gun	N/A
PPE	 Safety gloves	 Safety goggles	 Anti-dust respirator
	 Safety shoes	N/A	N/A

4.3. Determining the Installation Position

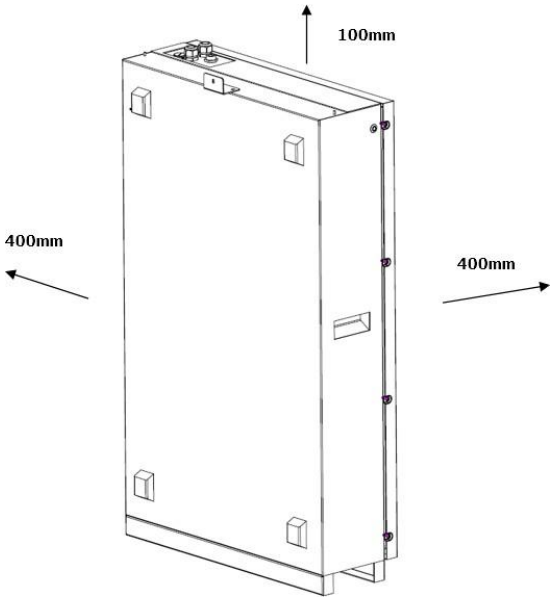
Basic Requirements

- The BRE-B-14K is protected to IP54 and can be installed indoors or outdoors.
- Install the BRE-B-14K in a sheltered place or install an awning over the BRE-B-14K, if install it outdoor.
- Do not install the BRE-B-14K in a place where a person can be easy to come into contact with its enclosure and heat sinks, because these parts are extremely hot during operation.
- Do not install the BRE-B-14K in areas with flammable or explosive materials.
- Do not install the BRE-B-14K at a place within children's reach.
- The BRE-B-14K will be corroded in salt areas, and the salt corrosion may cause fire. Do not install the BRE-B-14K outdoors in salt areas. A salt area refers to the region within 500 meters from the coast or prone to sea breeze. The regions prone to sea breeze vary depending on weather conditions (such as typhoons and monsoons) or terrains (such as dams and hills).

Installation Environment Requirements

- The BRE-B-14K must be installed in a well-ventilated environment to ensure good heat dissipation.
- To allow proper heat dissipation and installation, maintain appropriate clearances between the BRE-B-14K and other objects, as shown in Figure 4-1. If you have any questions about the clearances, consult local technical support engineers.

Figure 4-1 Installation space



Mounting Structure Requirements

- The mounting structure where the BRE-B-14K is installed must be fireproof.
- Do not install the BRE-B-14K on flammable building materials.
- Ensure that the installation surface is solid enough to bear the weight load.
- In residential areas, do not install the BRE-B-14K on drywalls or walls made of similar materials which have a weak sound insulation performance because the noise generated by the BRE-B-14K is noticeable.

Installation Angle Requirements

The BRE-B-14K can be floor or wall-mounted. The installation angle requirements are as follows:

- Install the BRE-B-14K vertically.
- Do not install the BRE-B-14K at forward tilted, back tilted, side tilted, horizontal, or upside-down positions.

4.4. Installing the BRE-B-14K

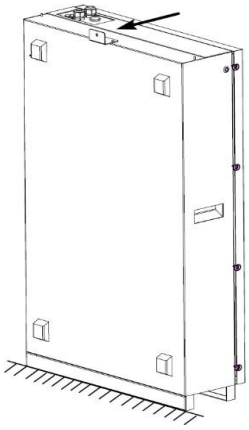
Procedure

DANGER

- To prevent device damage and personal injury, keep balance when moving the BRE-B-14K.
- Do not use the wiring terminals and ports at the bottom to support any weight of the BRE-B-14K.
- When you need to temporally place the BRE-B-14K on the ground, use foam, paper or other protection material to prevent damage to its cover.

Step 1: Make sure the battery box is firmly fixed to the ground.

Figure 4-2 Mounting battery box



Step 2 Install expansion bolts（**Figure 4-2** Arrow position）.

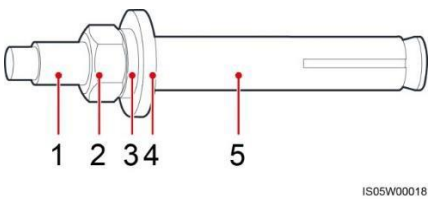
DANGER

Avoid drilling holes in the utility pipes and/or cables attached to back of the wall.

NOTE

If the length or number of M8x80 expansion bolts supplied with the BRE-I-5K14K is not enough, prepare M8 stainless steel expansion anchor bolts.

Figure 4-3 Expansion bolt composition



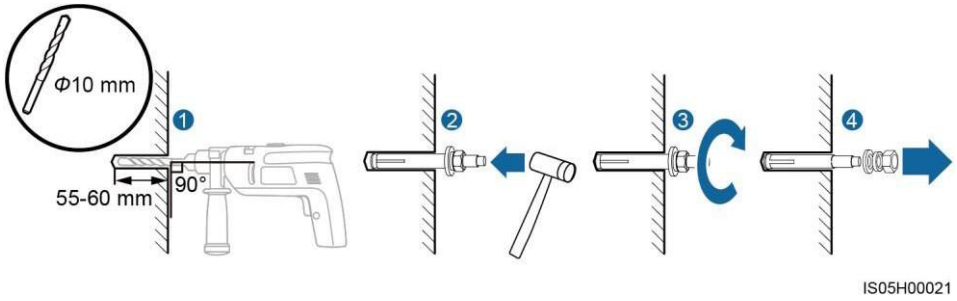
(1) Bolt (2) Nut (3) Spring washer

(4) Flat washer (5) Expansion sleeve

NOTICE

- To prevent dust inhalation or contact with eyes, wear safety goggles and an anti-dust respirator when drilling holes.
- Clean up any dust in and around the holes using a vacuum cleaner and measure the distance between holes. If the holes are inaccurately positioned, drill new set of the holes.
- Level the head of the expansion sleeve with the concrete wall after removing the bolt, spring washer, and flat washer. Otherwise, the mounting bracket will not be securely installed on the concrete wall.

Figure 4-4 Installing an expansion bolt



5 Electrical Connections

Precautions

DANGER

Before connecting cables, ensure all the switches connecting to the BRE-B-10Kare OFF. Otherwise, the high voltage of the BRE-B-14Kmay result in electric shocks.

DANGER

- The equipment damage caused by incorrect cable connections is beyond the warranty scope.
- Only certified electricians are allowed to connect cables.
- Operation personnel must wear proper PPE all the time when connecting cables.

NOTE

The cable colors shown in the electrical connection diagrams provided in this chapter are for reference only. Select cables in accordance with local cable specifications (green-and-yellow cables are only used for PE).

5.1 Preparing Cables

Battery box has positive and negative interface of battery, battery communication interface, PCS communication interface. All interfaces are built-in. The system wiring is strictly in accordance with the following requirements:

- Power cables shall meet the requirements of 100VDC voltage, 80A continuous current and 25mm2 wire diameter.
- All connectors must be safe and reliable to ensure that there are no loosening and virtual contact problems, and the contact resistance is less than 20 mΩ. The connectors must have anti-corrosion, wear-resisting and anti-seismic functions.
- The copper busbar terminals at the end of power cables adopt SC25-6.
- All connections must meet the requirements of relevant national standards, and strictly prevent various forms of arc discharge.
- It is strictly forbidden to have any form of short circuit in the process of connection.
- Operators are strictly forbidden to operate without wearing protective equipment.
- All connections must be carried out under clear guidance, and any form of conjecture or vague attempt is not allowed.
- The key points of connection is that ensure correct and reliable connection (not loosening), good contact (no contact resistance), no short circuit.
- After the wiring harnesses are connected, they must be measured and confirmed point by point.
- All connection points must ensure no contact with the external box or other parts, no short circuit.
- If there are other uncertain factors, please consult professionals before implementation.

Figure 5-1 Top View of the BRE-B-14K

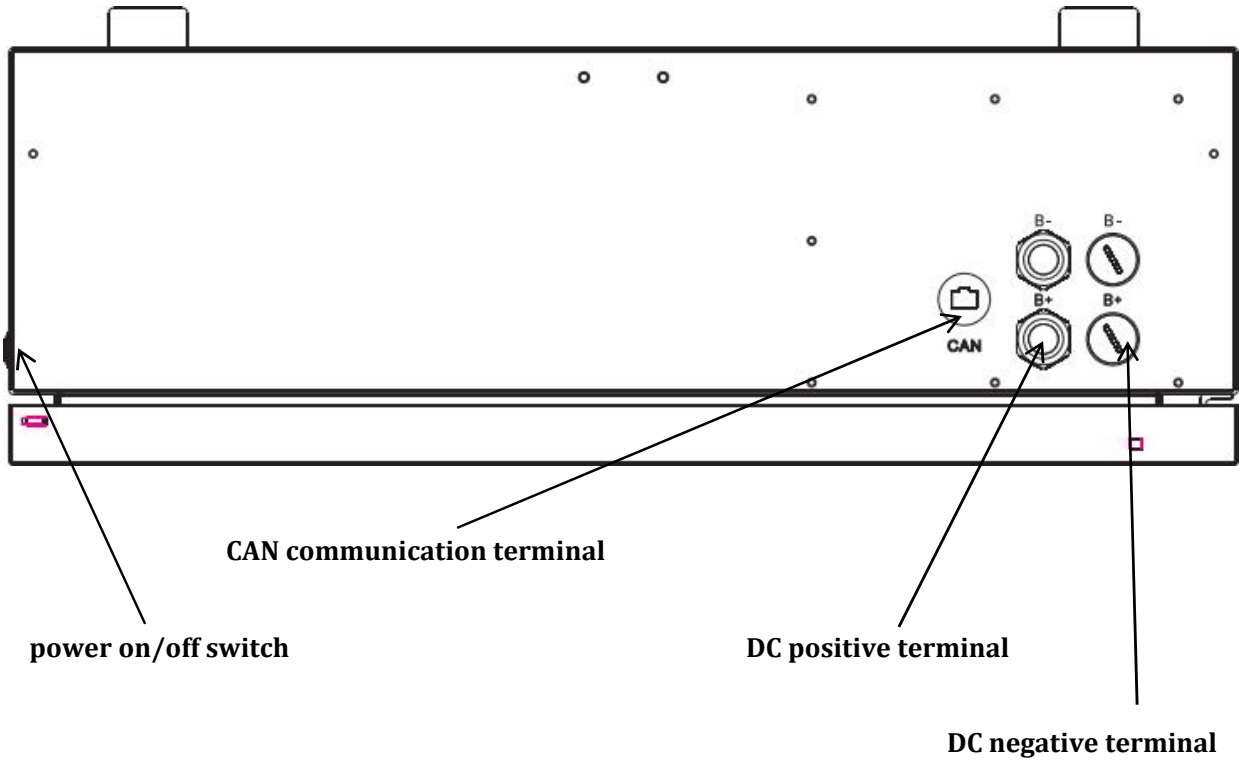
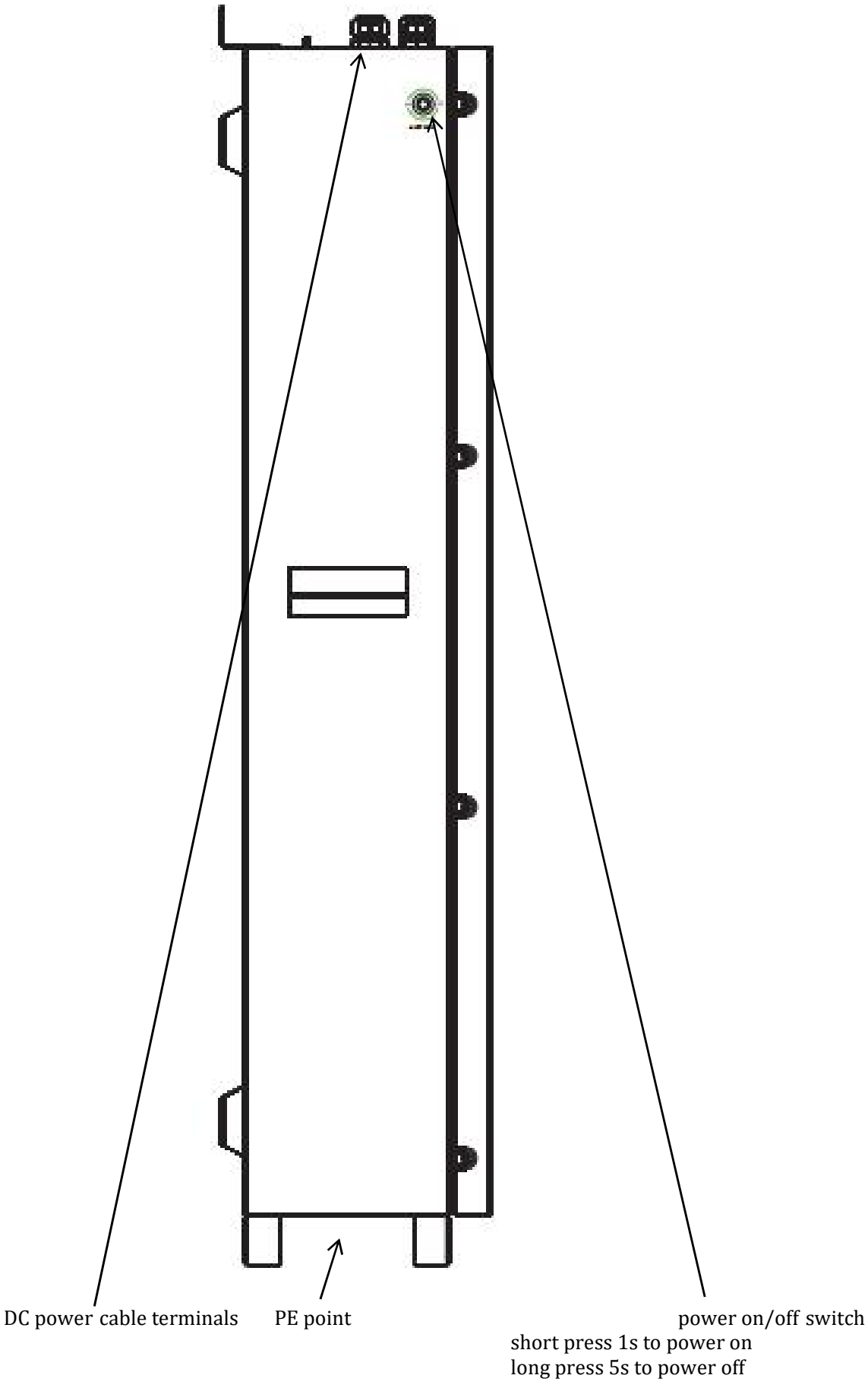


Figure 5-2 Side View of the BRE-B-14K


DC power cable terminals
PE point
power on/off switch
short press 1s to power on
long press 5s to power off

5.2 Installing Cable

Prerequisites

DANGER

- **BRE-B-14K doesn't contain an integrated overcurrent and isolation device that operates all live conductors (positive and negative conductors).**
- **For Australian market an overcurrent protection and isolation device is required between the battery system and inverter. The recommend rating is 120A for overcurrent protection device.**
- Before connecting the DC input power cable, ensure that the battery is power off.
- When the BRE-B-14K is operating, it is not allowed to work on DC circuit. Failing to do so may cause electric shocks.
- If no inverter connects to the DC input terminals, do not remove the watertight cap from the DC input terminals. Otherwise, the BRE-B-14K will not comply with its Ingress Protection Rating.

DANGER

Ensure that the following conditions are met. Otherwise, the BRE-B-10Kwill be damaged, or even become a fire hazard.

- If polarity of the DC input power cable is reversed and the external DC isolating device is ON, do not turn off the external DC isolating device immediately or unplug positive and negative connectors.

5.2.1 Installing the DC Input Power Cable

Procedure

- Trip 6mm of insulation from the Wire end.

Figure 5-3 Stripped length

- Connect the cable through the waterproof connector and connect the terminal in the main control box.

Context

DANGER

Do not connect the neutral wire to the enclosure as a PE cable. Otherwise, electric shocks will be caused.

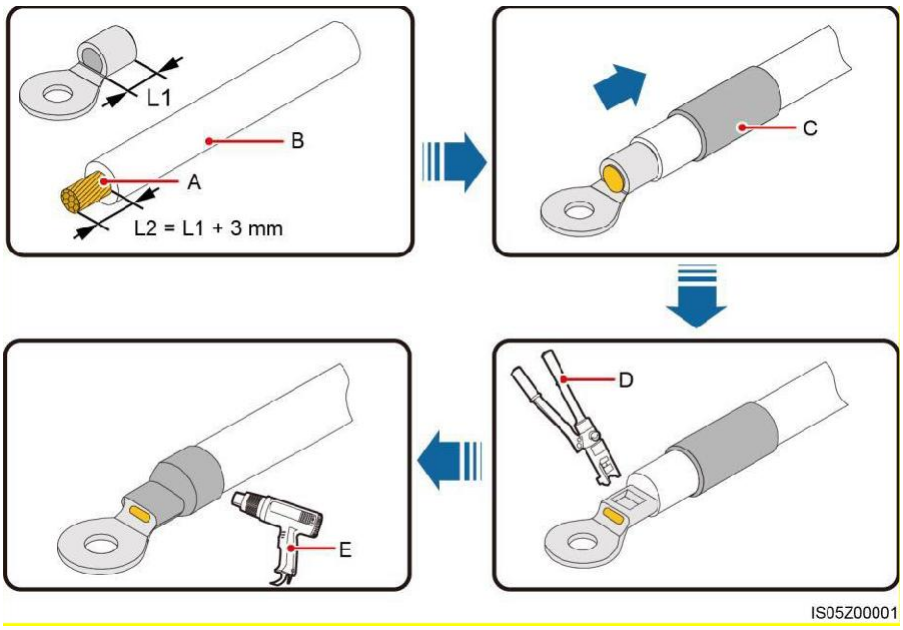
Procedure

Step 1 Crimp the OT terminal.

NOTICE

- Pay attention not to damage the core wire when stripping a cable.
- The cavity formed after the conductor crimp strip of the OT terminal is crimped must wrap the core wires completely. The core wires must contact the OT terminal closely.
- Wrap the wire crimping area with heat shrink tubing or PVC insulation tape. The following figure uses heat shrink tubing as an example.
- When using the heat gun, protect devices from being scorched.

Figure 5-4 Crimping an OT terminal



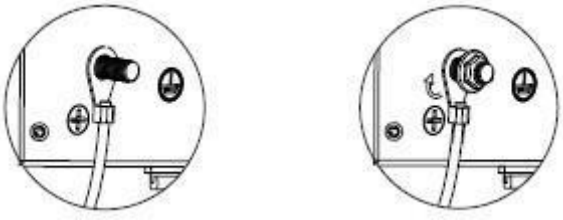
(A) Core wire (B) Insulation layer (C) Heat shrink tubing
(D) Hydraulic pliers (E) Heat gun

Step 2 Connect the PE cable.

NOTICE

Ensure that the PE cable is connected securely.

Figure 5-5 Connecting a PE cable



NOTE

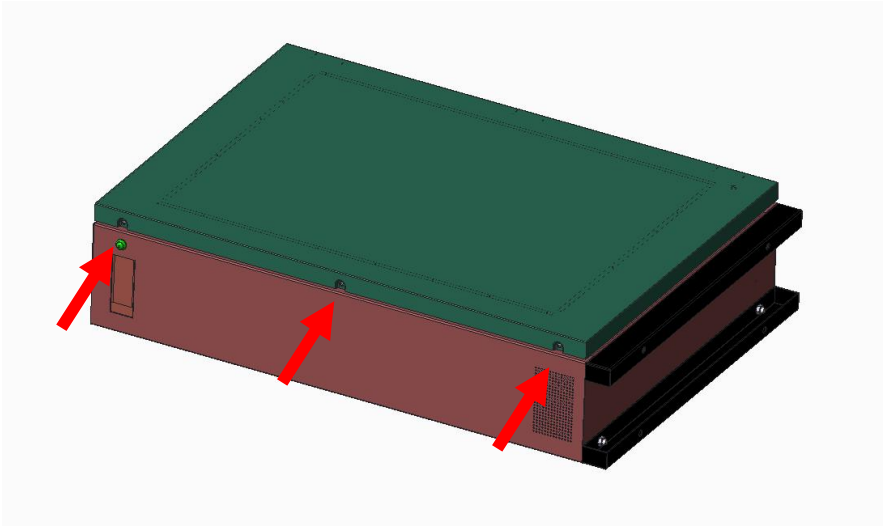
- The PE point is on the enclosure underneath the BRE-B-14K (**Figure 5-2**).
- To enhance the corrosion resistance of a ground terminal, apply silica gel or paint around the terminal after connecting the ground cable.

5.2.2 Installing the DC Cables and Communication Cable

Procedure

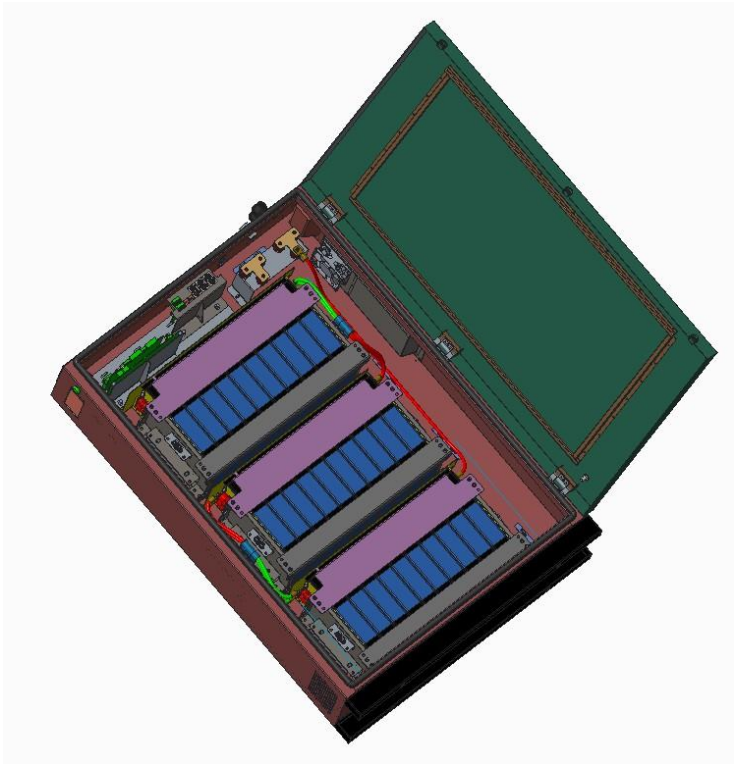
Step 1 Unscrew the bolts outside the shell of battery module.

Figure 5-6 Unscrew the bolts outside



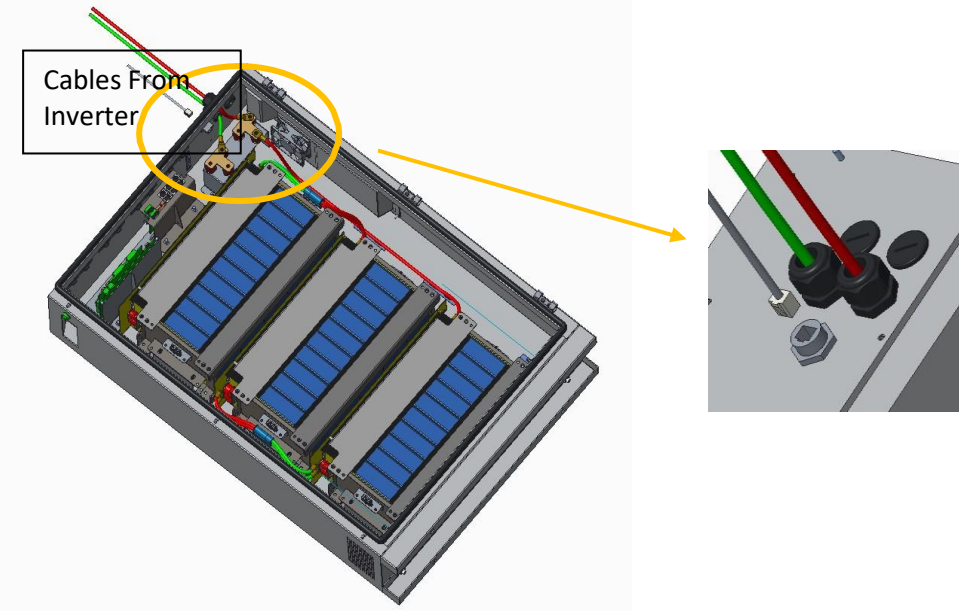
Step 2 Open the cover.

Figure 5-7 Open the cover



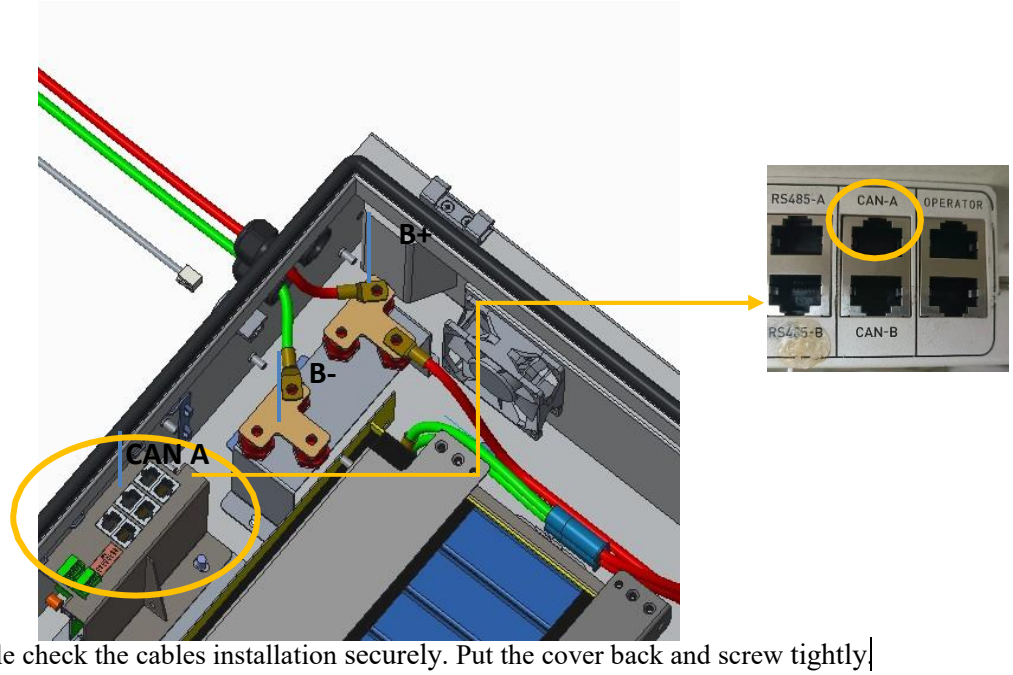
Step 3 Positive cable from Inverter **(**Red) cable goes through the B+ port, and Negative cable from inverter (green) goes through the B- port. Communication cable (Grey) goes through the CAN communication port.

Figure 5-8 locations of the cable ports



Step 4 Use screws to connect the DC power cables to mother bus and plug the CAN communication cable into the CAN-A port.

Figure 5-9 location of mother bus and CAN-A port



Step 5 Double check the cables installation securely. Put the cover back and screw tightly.

NOTICE

Ensure that the cables are connected securely.

6 System Commissioning

6.1 Checking Before Power-On

Table 6-1 Installation checklist

No.	Check Item	Acceptance Criteria
1	BRE-B-14K installation	The BRE-B-14K is installed correctly, securely, and reliably.
3	Cable layout	Cables are routed properly as required by the customer.
4	Cable tie	Cable ties are secured evenly, and no burr exists.
5	Grounding	The ground cable is connected correctly, securely, and reliably.
6	DC power OFF	The DC power button is switched OFF.
7	Cable connections	PE cable, CAN communication cable and DC power cables are connected correctly, securely, and reliably.
8	Unused terminals and ports	Unused terminals and ports are locked by watertight caps.
9	Installation environment	The installation space is proper, and the installation environment is clean and tidy, without foreign matter.

6.2 Powering on the System

Procedure

- Turn on overcurrent isolation and protection device between battery and inverter (For Australian market)
- Press battery ON/OFF button (Figure 5-2) for 1 second to turn on the battery.

6.3 Powering Off the System

Context

DANGER

After the BRE-B-14K powers off, the remaining electricity and heat may still cause electric shocks and body burns. Therefore, put on protective gloves and begin servicing the BRE-B-14K 5 minutes after the power-off.

Procedure

- Press battery ON/OFF button (Figure 5-2) for 5 seconds to turn off the battery.
- Turn off overcurrent isolation and protection device between battery and inverter (For Australian market)

NOTICE

Battery monitoring is achieved via the inverter only.

7 Handling the BRE-B-14K

7.1 Packaging

- Packaging scheme: One 10kWh rechargeable li-ion battery system product and one maintenance control box are placed in one box. The whole system is packaged to ensure that the product is free from any harmful gases, chemical pollution, static electricity, moisture and mechanical damage during handling, transportation, and storage. The outer packing of the product uses corrugated carton and the inner part uses pearl cotton as cushioning protection, which can reduce the vibration during transportation, etc.

- Label on package: According to the standard requirements of GB/T 191-2008 packaging labelling, the signs on the outer packing box includes "Handle with Care", "Up", "Rain Proof", "Sunscreen", "Center of gravity", "Stack Limit", "No Turning Over" and "Class 9 Dangerous Goods".

- Information on the package includes: name, model, date of production, quantity, address, zip code, executive standard number, net weight, and gross weight.

- Accompanying documents in the packing box include: packing list, product qualification certificate, product user manual and factory inspection report.

7.2 Transportation

- The product is packed in a box and then transported. During the transportation, the charge state of the battery is 30%~50% or meets the specified requirements.

- Avoid violent vibration, impact, extrusion, and mechanical impact during transportation, prevent direct attack of sunshine, rain, and snow, and do not invert.

- In the process of loading and unloading, loading and unloading in a civilized manner, lifting and releasing gently, strictly prevent throwing, tumbling and pressure.

7.3 Storage

- The charge state of the product should be no less than 30%, the storage environment temperature is - 20~45℃and the relative humidity is 5%~95%.

- Do not store the product upside down, and avoid mechanical impact and pressure.

- The product should not be exposed to direct sunlight, avoid contact with corrosive media and keep away from fire and heat sources during storage. The system should be stored in a dry warehouse and not exposed to sunshine or rain. Harmful gases, inflammable and explosive products and corrosive chemicals are not allowed in the warehouse. Avoid mechanical impact, heavy pressure and strong magnetic field effects, as well as direct sunlight. The distance from the heat source shall be no less than 2m. The packing box shall be at least 20cm above the ground and at least 50cm from the window.

- Under these conditions, the products with a storage period of more than 3 months shall be subjected to a supplementary power supply; the products with a storage period of more than 6 months shall be subjected to full-charge and full-discharge test; the products with a storage period of more than 1 year shall be notified to the manufacturer for re-inspection before use.

7.4 Safety precautions

The installation and maintenance of battery system must be operated by professional technicians. The use of battery system must strictly abide by relevant safety regulations. Non-professional and improper operation may cause serious consequences such as electric shock, combustion, and explosion. It is strictly forbidden for non-professionals to install, repair the battery system and abuse beyond the scope.

7.5 Moisture-proof and water-proof

The battery system is an energy storage device, including many control circuits and single cells. Liquid entering the battery system may lead to short circuit, leakage, and corrosion of single cells, electronic circuits, and connectors. Therefore, it is necessary to ensure that the battery system will not be immersed in various liquids and moist air will not enter the battery system.

7.6 Environmental insulation

The battery system must work within the optimal operating temperature range, which can greatly extend the service life of the battery and improve the safety performance of the battery. The temperature limit should fully meet the various definitions in the specification. The space where the battery system is installed shall be kept ventilated and insulated and shall not be exposed to direct sunlight.

7.7 Insulation

All power supply connections in the battery system must ensure that there are adequate insulation protection measures to ensure that the positive and negative poles of the battery will not contact the outer box under any circumstances, resulting in power leakage and short circuit. It is necessary to ensure that the positive and negative poles of the battery system will not be short-circuit directly at any time, otherwise major safety and electric shock accidents may occur.

7.8 Unimpeded air channel

In the process of high current charging and discharging, the battery will generate certain heat. The thermal management system of the battery pack adopts the form of fan exhaust to dissipate heat. Therefore, in the process of installation of the battery pack, it is necessary to fully consider the unimpeded intake and outlet of the battery pack and the air volume meets the design requirements, to ensure the heat dissipation effect of the battery pack. Otherwise, it may seriously damage the performance of the battery, cause the battery not to work, and even cause the thermal runaway accident of the battery.

7.9 Accident disposal

The battery system should take correct and effective measures to deal with the abnormalities and accidents in time to avoid further damage and loss:

Overheating

Normally, when the battery is overheating, the cooling system will automatically dissipate heat, so that the temperature of the battery system can cool down to the optimum operating temperature range. When the temperature of the battery system exceeds the safe use limit, the management system will give a warning and needs to stop using immediately. In this case, the use of batteries should be stopped immediately and relevant technical personnel should be notified for a comprehensive inspection.

Electric leakage

In the process of using, if electric leakage is found in the battery system, you must immediately evacuate the personnel, and notify the relevant technical personnel to deal with the scene. It is strictly prohibited to operate while the battery has problems or continue to be used by force.

Over-discharge

When the battery system runs out of power and the total voltage or single voltage is too low, the management system will give a warning. At

this time, the discharge of the battery should be stopped immediately and the battery

should be charged. At this time, it is strictly prohibited to continue discharging the battery by force, otherwise it will damage the battery performance and may lead to permanent damage of the battery in serious cases, so it cannot be used any more.

Short circuit

When a short circuit occurs in the battery system, the personnel must be evacuated immediately, the relevant power supply and electrical equipment should be cut off (if possible), the connection between the battery and the system should be disconnected immediately, and the relevant technical personnel should be notified to repair and troubleshoot on the spot. Shortened battery system must be fully tested by the manufacturer before deciding whether it can continue to be used after partial maintenance.

Combustion

In case of a combustion accident in the battery system, the personnel must be evacuated immediately, and a security cordon must be set up. Irrelevant personnel shall not be allowed to approach the battery system (because there may be an explosion danger). Special fire extinguishers should be used to extinguish the fire by professionals. After the fire extinguishing is completed, the personnel wearing the necessary protective equipment shall first cut off the power supply connection harness, and the battery system shall apply resistance to fully discharge (voltage to zero volts) before removing the battery pack for subsequent operation analysis.

Collisions of battery system

When the battery system is impacted, deformed, or punctured by foreign bodies, disconnect the power connection of the battery immediately and inform the professionals to deal with it on the spot. If it is necessary to remove the battery, the battery should be fully discharged by the personnel wearing necessary protective equipment before disassembly.

Insulation

All power supply connections in the battery system must ensure that there are adequate insulation protection measures to ensure that the positive and negative poles of the battery will not contact the outer box under any circumstances, resulting in power leakage and short circuit. It is necessary to ensure that the positive and negative poles of the battery system will not be short-circuit directly at any time, otherwise major safety and electric shock accidents may occur.

Other accidents

When the rechargeable li-ion battery system needs to be repaired or removed due to other accidents, the battery cable should be disconnected first to ensure that the personnel do not get electric shock. In the case that the battery will not be short-circuited, remove the battery pack to ensure that the battery pack will not be damaged in collision, fall, inversion and other circumstances. If this happens, please refer to the above provisions for handling.

8 Technical Specifications

8.1 Battery

Model	BRE-B-14K
Battery type	LFP
Nominal Battery Voltage	51.2V
Battery Capacity	280AH
Battery Voltage Range	40~60V
Max. Charging Current	50 A
Max. Discharging Current	50 A
Discharge depth (%)	90%
Communication Port	CAN
Charging curve	3-stage adaptive with maintenance
Battery temperature sensor	Yes
Etching Aluminium Label	Yes

8.2 General Data

Model	BRE-B-14K
Size (Width*Height*Depth)	620*1050*210mm
Weight	133kg
Mounting	Wall Hangings
Operating Temperature Range	0-45℃ CHG;-20-45℃ dchg
Humidity	5%~95%, non-condensing
Operation Altitude	<2000m
Protection Degree	IP54
Cooling	Natural Convection
Noise (dB)	＜35dB(A)
User Interface	LED
Communication Port	CAN/ RS232
Protective Class	I
Pollution degree	II
Overvoltage category	II
Reference standard	IEC 62619, IEC 62040, IEC61000-6-1, IEC61000-6-3, UN38.8
Warranty	4000 cycles or 5 years

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