User Manual



CQ Series

CQ6/CQ6 (w)
CQ6.6 (w)
CQ7/CQ7 (w)
CQ7-80/CQ7-80 (w)

To prevent damage to the product caused by improper use, please carefully read this manual before operation.

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FOXESS CO., Ltd

Add: No.939, Jinhai Third Road, New Airport Industry Area, Longwan District, Wenzhou, Zhejiang, China

Tel: 0510- 68092998

Postcode: 325024

WWW.FOX-ESS.COM

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1 Notes on This Manual

The document describes the installation, commissioning, maintenance and troubleshooting of the following high voltage battery listed below.

CQ6/CQ6 (w)/CQ6.6 (w)/CQ7/CQ7 (w)/CQ7-80/CQ7-80 (w)

The battery chemistry of these products is Lithium Iron Phosphate. This manual is designed for qualified personnel only. The tasks described in this document should be performed by authorized and qualified technicians only.

After Installation the Installer must explain the user manual to the end user.

All warranty-related information is subject to the product warranty documentation.

Symbols Used

The following symbols are used in the manual to highlight information in order to ensure the safety of the user's person and property when using the battery, and to use the battery more efficiently and optimally. The following symbols may appear in this manual, and the meanings they represent are listed below:

⚠ Danger!

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

⚠ Warning!

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

Note!

"Note" provides important tips and guidance.

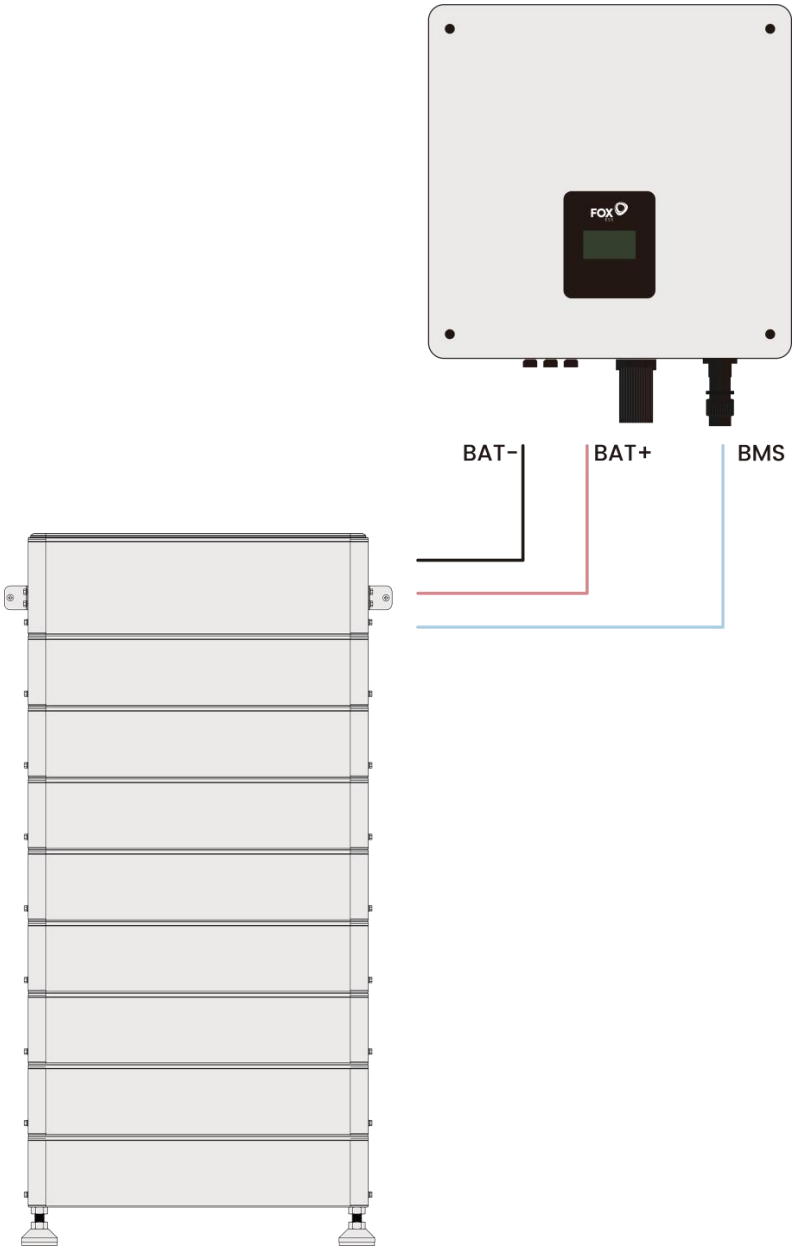
Symbols	Explanation
CE	CE mark. The battery complies with the relevant EU directives.
RCM	RCM mark.

	The battery meets the requirements of the UK product safety certification.
	Danger of high voltages. Danger to life due to high voltages in the battery!
	Do not place nor install near flammable or explosive materials.
	Install the product out of reach of children.
	Prohibit the use of water to extinguish fires.
	Prohibition of private maintenance.
	Prohibit Connector Reversal.
	Read the manual before performing any operations on the battery.
	Do not dispose of the product with household wastes.
	Disconnect the equipment before carrying out maintenance or repair.
	Observe precautions for handling electrostatic discharge sensitive devices.
	PE conductor terminal.
	Caution, risk of electric shock, energy storage timed discharge.

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2 Product Introduction

CQ-S is the battery module, and CQ-M includes system controller and battery module. Ensure that each system has only 1 CQ-M and a maximum of 13 CQ-S.



System diagram

Note!

The figure is for reference only, the actual configuration will depend on the specific project.

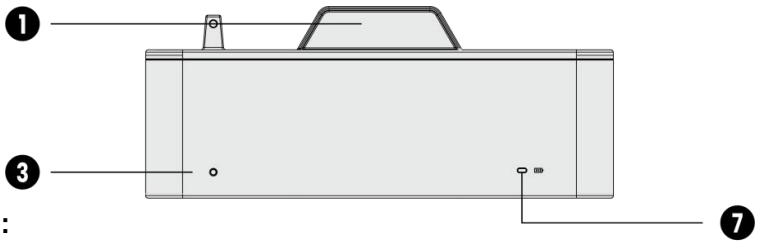
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2.1 Battery Interface

The battery system contains the following Interface to allow it to connect and operate efficiently.

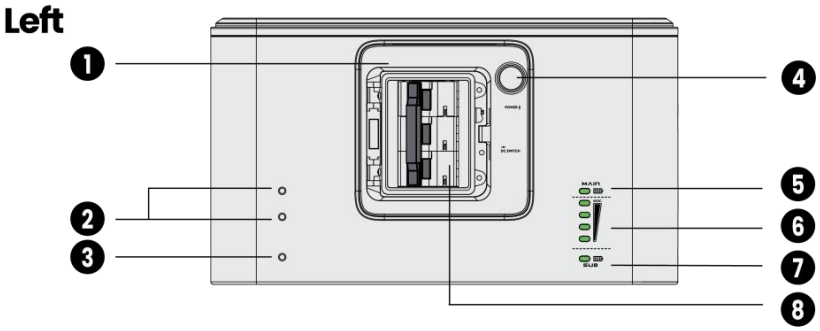
CQ-S Features:

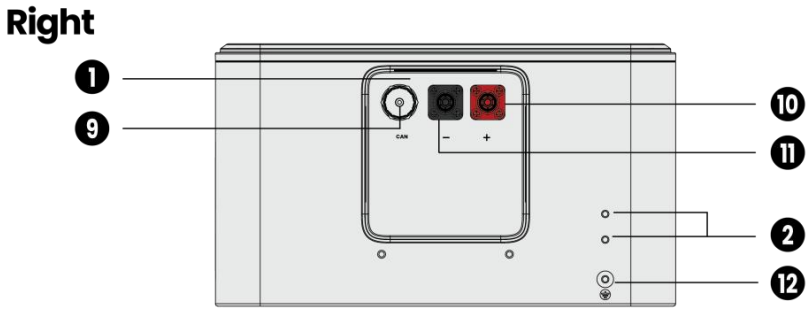
- interface:



CQ-M Features:

- interface:





No.	Description	No.	Description
1	Handle	7	Operating Status LED
2	Bracket Mounting Hole	8	DC Switch
3	Battery Fixing Hole	9	CAN
4	POWER Switch	10	DC OUT+
5	BMS Status LED	11	DC OUT-
6	SOC LED	12	Earth Terminal

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DC Switch

Power switch, battery charge and discharge circuit switch.

DC OUT +

Connect bat + of inverter.

DC OUT -

Connect bat - of inverter.

POWER Switch

System power on switch, press this switch, the system starts to work.

BMS Status LED and SOC LED

LED display specific alarm information and battery system power.

Operating status LED

This LED is used to indicate if the battery is operating effectively. A green light on this LED means the battery is ON and operating normally. If the battery is operating failure, a red light on this LED means the battery is operating abnormally.

2.2 Battery Function

2.2.1 Battery Protection Function

The batteries have been fitted with multiple protection systems to ensure the safe operation of the system. Some of the protection system includes:

- Inverter interface protection: Over Voltage, Over Current, External Short Circuit, Reverse Polarity, Ground Fault, Over Temp, In Rush Current.
- Battery protection: Internal Short Circuit, Over Voltage, Over Current, Over Temp, Under Voltage.

2.2.2 Fire Protection Function

Despite the extremely stable chemical properties of lithium iron phosphate batteries and the multiple protections, each battery unit is equipped with a fire protection module to further ensure the safety and reliability of Fox ESS batteries. This innovative module utilizes a new type of aerosol fire extinguishing device with features such as pressure-free storage, no maintenance required, high extinguishing efficiency, non-toxic and harmless characteristics.

Fire Extinguishing Mechanism

The fire extinguishing mechanisms of common agents mainly include isolation,

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smothering, cooling, and chemical suppression, with different agents exhibiting varying mechanisms. The fire extinguishing mechanism of thermal aerosols involves two main mechanisms: the cooling effect from endothermic decomposition and the chemical suppression effects in both gas and solid phases, which work synergistically. Additionally, the gaseous components in the products of the aerosol extinguishing agent also play a supportive role.

Cooling Fire Extinguishing Effect from Endothermic Decomposition

The cooling effect of thermal aerosol extinguishing agents is primarily due to the endothermic decomposition of metal oxides and carbonates. When a fire occurs, the solid particles in the aerosol rapidly absorb heat from the fire source, resulting in a decrease in flame temperature. This reduction minimizes the heat radiating to the burning surface and lowers the energy required to dissociate vaporized combustible materials into free radicals. As a result, the combustion reaction is effectively suppressed.

Gas Phase Chemical Suppression Effect

Under thermal conditions, vaporized metal ions, such as strontium (Sr), potassium (K), and magnesium(Mg), exist as vapors and participate in multiple chain reactions with active combustion radicals including hydrogen (H·), hydroxyl (·OH), and oxygen (O·). For example:

$Sr+2•OH→Sr(OH)_2$

$Sr+O•→SrO$

$Sr(OH)_2+2H•→Sr+2H_2O$

Through continuous action, this process consumes active combustion groups, significantly reducing their concentration and effectively suppressing combustion.

Solid Phase Chemical Suppression Effect

The solid particles in thermal aerosol extinguishing agents can adsorb intermediates such as $•OH$, $H•$, and $O•$ from chain reactions, catalyzing their recombination into stable molecules. This interrupts the essential branching chain reactions in the combustion process. For example:

$K_2O\ (s)+2H\ (g)→2KOH\ (s)\ KOH\ (s)+OH\ (g)→KO\ (s)+H_2O\ (g)$

$K_2O\ (s)+O\ (g)→2KO(s)\ KO(s)+H(g)→KOH$

Technical Specifications

Activation method: Thermal activation

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Thermal activation temperature: ≥ 170℃

Discharge time: ≤ 5 seconds

⚠ Danger!

Please contact Fox ESS for immediate replacement if the fire protection module is activated.

Non-professionals should not disassemble the battery without authorization.

Do not touch the device until the casing has cooled after the internal fire extinguisher has been activated to prevent burns.

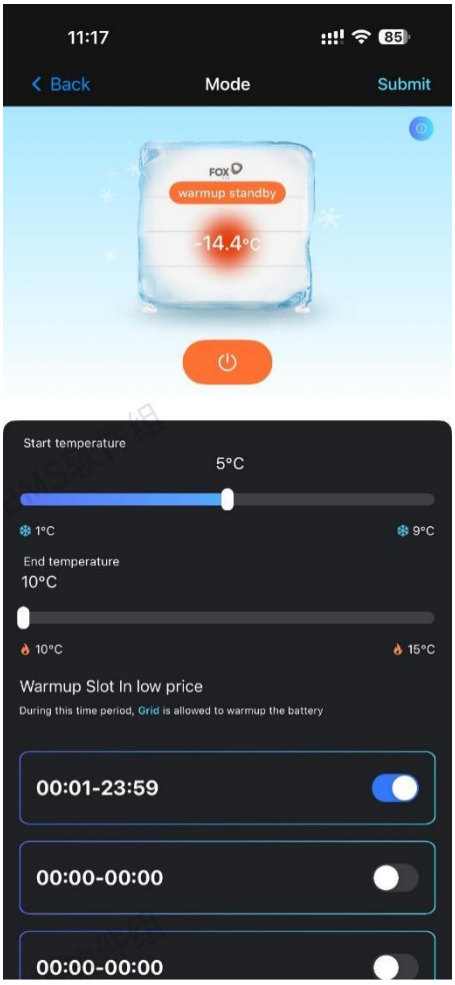
For further assistance, please contact an authorized personnel or Fox ESS for further instructions.

2.2.3 Warm up Function

In low-temperature climates at high altitudes or latitudes, particularly during winter, the charging and discharging performance of batteries can significantly decline due to cold temperatures. To address this Fox ESS has introduced a "Battery Warm up" feature, enabling the battery system to operate effectively extremely low temperatures. This feature is exclusively available in the warm-up versions.

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The battery heating interface in the APP



1. Heating main switch button;
2. Heating start temperature, eg.: temperature range 1~9℃ optional;
3. Heating stop temperature, eg.: temperature range 10~15℃ optional;
4. Three heating time periods can be set;
5. Battery heating status and minimum temperature display.

(a) Battery self heating state

If Battery SOC >= 10%, MinCell Temperature < Start Temperature, and not in low-temperature protection state, and within the set heating time.

Then the battery is in a self heating state, and the heating resistor is powered by the battery itself. At this time, the inverter power control is not affected.

(b) Inverter controls heating state

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If Battery SOC < 10% or in low-temperature protection state, and MinCell Temperature < Start Temperature and within the set heating time.

Then the battery is in an inverter controlled heating state, and the heating resistor is powered by the inverter. In this state, the inverter can only provide power for heating the battery and cannot respond to other charging and discharging requests.

Important Notes:

Control method:

The app or cloud platform transmits settings for the heating switch, heating activation temperature, shutdown temperature and heating activation time window to the PCS via the network; the PCS sends these settings to the BMS via the CAN protocol; the BMS controls the temperature based on these settings and uploads temperature-related status data to the PCS via CAN; the PCS then uploads this data to the app or cloud platform via the network.

1. The battery can only discharge when the internal temperature of battery is above -10℃. It can only charge when the internal temperature of battery is above 0℃.

2. Please check that the wiring is properly connected and that all batteries are the warm up versions; otherwise, the Warming up function will not operate.

3. Warming up control is based on the internal cell temperature of the battery, rather than the ambient temperature. Typically, the cell temperature will be higher than the ambient temperature under normal operating conditions.

For further assistance, please contact an authorized personnel or Fox ESS for further instructions.

Note:Products with "(w)" suffix, such as CQ7-M-80 (w) and CQ7-S-80 (w) are equipped with Battery Warm up function. Without the "(w)" suffix, like CQ7-M-80 and CQ7-S-80 are not equipped with the Battery Warm up function.

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3 Safety Precautions

3.1 Personnel Safety

Any work on the batteries should be handled by purchaser approved installer and hence it is understood that the purchaser approved installer should familiarize themselves with the contents of this manual before any maintenance or installation is carried out on the system.

⚠ Danger!

Operating Requirements

- High voltage exists inside the equipment. Unauthorized removal of necessary protective measures, improper use, and improper installation and operation may cause serious safety hazards, shock hazards, or equipment damage, and the resulting damage to the equipment is not covered by the warranty.
- Do not energize the equipment without completing the installation or without professional confirmation, and strictly prohibit operation with electricity.

⚠ Warning!

Operating Requirements

- Always use special insulated tools for wiring operations. Direct contact or contact with other conductors or indirect contact with the power supply equipment through wet objects is prohibited.
- During operation of the equipment, the enclosure temperature is high and there is a risk of burns. Before touching any part of the battery, make sure that the equipment and its surfaces are at a contact-safe temperature and voltage before proceeding.

Note!

Personnel requirements

- All operations, including transportation, installation, start-up and maintenance, must be performed by qualified and trained personnel.

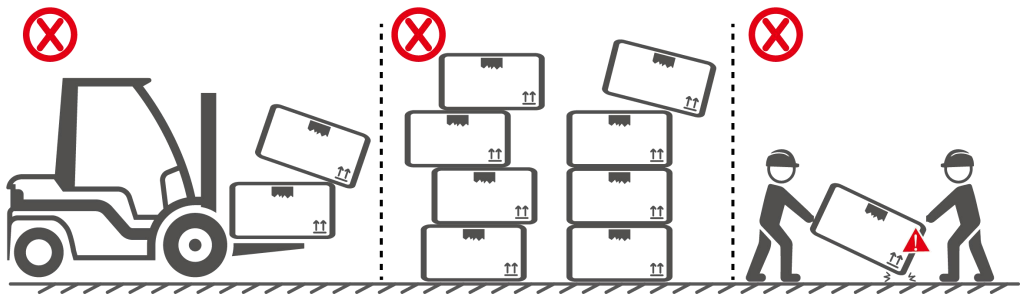
3.2 Handling

- Do not expose battery to open flame.
- Store in a cool and dry place with ample ventilation.
- Do not store the battery near water sources.
- Store the battery on a flat surface.
- Recommend to store the battery out of reach of children and animals.
- Do not damage the unit by dropping, deforming, impacting, cutting or penetrating with a sharp object. It may cause leakage of electrolyte or fire.

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- Do not touch any liquid spilled from the battery. There is a risk of electric shock or damage to skin.
- Always handle the battery wearing the insulated gloves.
- Do not step on the battery or place any foreign objects on it. This can result in damage.
- Do not charge or discharge damaged battery.

Warning: Do not use the battery if it has been dropped or appears compromised.



3.3 Installation

- Do not exceed the battery voltage rating of the inverter.
- Do not connect the battery to any incompatible inverter.
- Do not open the battery to repair or disassemble. Only Fox ESS is allowed to carry out any such repairs.
- In case of fire, use only dry powder fire extinguisher. Liquid extinguishers should not be used.
- Do not use battery in high static environment where the protection device might be damaged.
- Do not install with other batteries or cells.
- Please ensure on installation site that the deviation of voltages between new batteries and every single present battery is less than 0.5V.
- Recommend to check the new batteries mounted on-site comply to the warranty scope or have ever been re-charged within 5 months; on top of that, please make sure the SOC of present battery system onsite is 50%±5%.
- Do not install the equipment outdoors in salt-affected areas because it may be corroded. A salt-affected area refers to the region within 1000 m of the coast or prone to sea breeze. Regions prone to sea breeze vary with weather conditions (such as typhoons and monsoons) or terrains (such as dams and hills).

3.4 Mounting

Make sure the installation site meets the following conditions:

- Keep the installation area away from high-temperature sources, flammable or explosive materials, and other potential explosion hazards such as gas valves, LPG cylinders, heat pumps, firewood stacks, etc.
- The installation area must be completely waterproof, with a hard, level floor, and the wall should not have noticeable inclined angle.
- Maintain low and stable humidity with good ventilation; dust and dirt within the

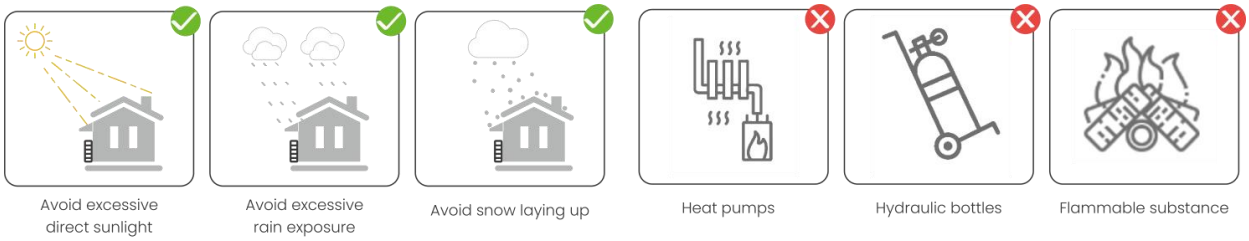
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installation area must be minimized.

- Position the installation area away from television antennas or antenna cables to avoid lightning strikes and electromagnetic interference.
- Avoid the presence of flammable debris around the battery, such as cotton, fabric, haystacks, etc., which may be ignited by sparks and then lead the fire source to the battery, thus causing the battery to burn.
- Avoid the presence of hot or flammable objects around the battery, such as hydraulic bottles (natural gas, oxygen, etc.), heat pumps and so on.

Outdoor Installation

- The ingress protection rating for this product is IP65 and it is therefore suitable for outdoor use. Locations fully exposed to precipitation and/or extended periods of exposure to direct sunlight should, where possible, be avoided. A location where there is some direct exposure to the elements, or where complete protection cannot be achieved, are permissible and will not impact upon warranty claims providing reasonable measures have been taken. For more clarification, please contact your local Fox ESS service team.



3.5 Response to Emergency Situations

The batteries comprise of multiple batteries connected in series. It is designed to prevent hazards or failures. However, Fox ESS cannot guarantee their absolute safety.

Under exposure to the internal materials of the battery the following recommendations should be carried out by the user.

- If there has been inhalation, please leave the contaminated area immediately and seek medical attention.
- If there has been contact with eyes, rinse the eyes with running water for 15 minutes and seek medical attention immediately.
- If there has been contact with the skin, wash the contacted area with soap thoroughly and seek medical attention immediately.
- If there has been ingestion, induce vomiting and seek medical attention.

Fire Situation

In situations where the battery is on fire, if it is safe to do so, disconnect the battery pack by turn off the circuit breaker to shut off the power to the system. Use FM-200 or CO2 fire extinguisher for the battery and an ABC fire extinguisher for the other parts of the system.

Under any fire situation, please evacuate the people from the building immediately before trying to extinguish it.

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Water Situation

This product features dust protection and is resistant to powerful water jets, but it is not designed to be submerged. Hence care should be taken not to get it wet. If you find the battery completely or partially submerged in water do not try to open. Contact an authorized personnel or Fox ESS for further instructions.

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4Storage Requirement

- It is recommended that the battery storage time is not more than 6 months.
- For the first installation, the interval among manufacture dates of battery modules shall not exceed 3 months.
- Regularly check whether the service environment of the battery meets the requirements, and the installation position should be far away from the heat source.
- The battery module should be stored in an environment with a temperature range between -20℃- +55℃, and charged regularly according to the table below with no more than 0.5 C(A C-rate is a measure of the rate at which a battery is discharged relative to its maximum capacity.) to the SOC of 50% after a long time of storage.

Storage environment temperature	Relative humidity of the storage environment	Storage time	SOC
Below -20℃	/	Not allowed	/
-20~0℃	10%~90%	≤ 1 months	20%≤SOC≤50%
0~35℃	10%~90%	≤ 6 months	20%≤SOC≤50%
35~55℃	10%~90%	≤ 1 months	20%≤SOC≤50%
Above 55℃	/	Not allowed	/

Note!

If the battery is stored over one year,5%- 8% of the capacity may lose irreversibly.

- Every year after installation. The connection of power connector, grounding point, power cable and screw are suggested to be checked. Make sure there is no loose, no broken, no corrosion at connection point. Check the installation environment such as dust, water, insect etc.

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5 Installation

5.1 Items in the package

Note!

Please check if following items are including with the package. After unpacking, please check the product for damages and missing parts.

For CQ-S

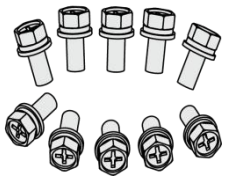
A



Mounting screw*2

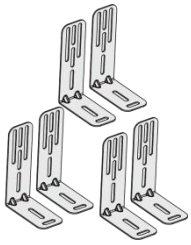
For CQ-M

B



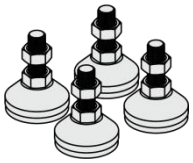
Mounting screw*10

C



Fixing bracket*6

D



Footstand*4

E



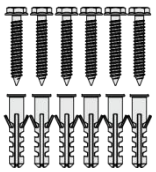
Communication cable (BMS-inverter)

F



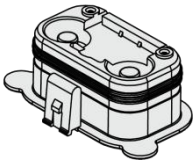
Installation guide

G



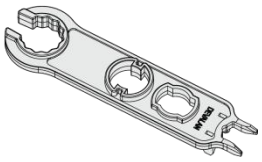
Expansion tube*6 & Expansion screw*6

H



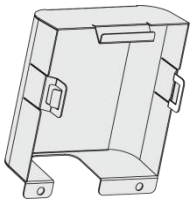
Waterproof cover

I



PV connector removal tool

J



Protective cover

K



Grounding cable

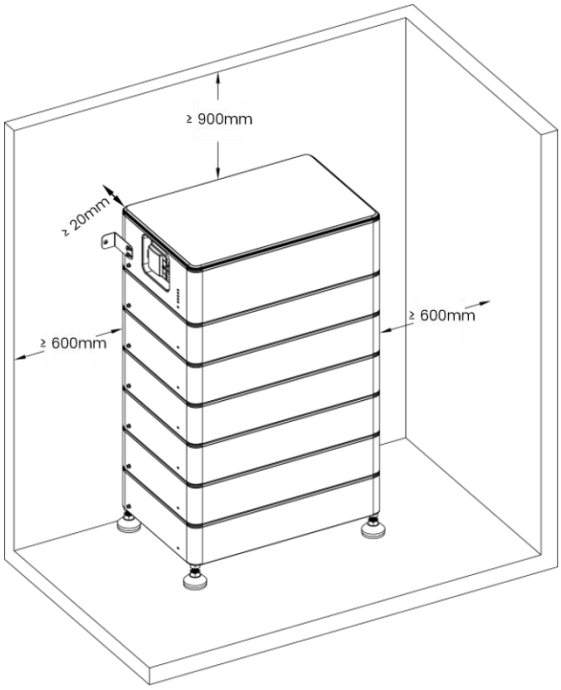
L



DC output cable (Wire gauge 16 mm^2)

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5.2 Clearance



Note!

- The battery system can be installed indoors or outdoors.
- To ensure proper heat dissipation of the battery pack, a reasonable clearance must be left around it (see the figure above for the specific distance).
- Installation clearance requirements shall comply with local regulations.
- Make sure that the battery module is always exposed to the ambient air. The battery module is cooled by natural convection. If the battery module is entirely or partially covered or shielded, it may cause the battery module to stop operating.
- The safety clearance for equipment installation must comply with local regulations.
- For indoor installation scenarios, the installation area must be no less than 10 m^2.
- The battery system must be kept at least 2 meters away from heat sources.

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5.3 Tools

The following tools will be required to install CQ-M and CQ-S.



Safety Shoes



Safety Gloves



Safety Glasses



Phillips Screwdriver

6mm Magnetic



Crimpers



Plier



Wire Cutter



Hammer Drill

@φ8mm



Rubber Mallet

Ribbon



Multimeter



Spirit Level



Tape



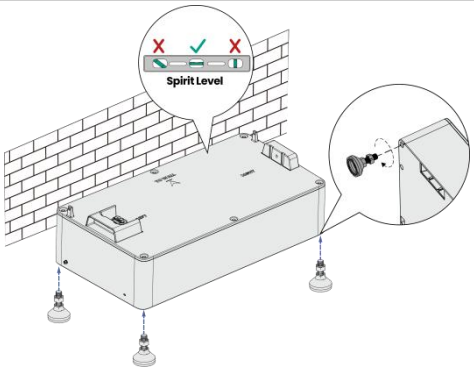
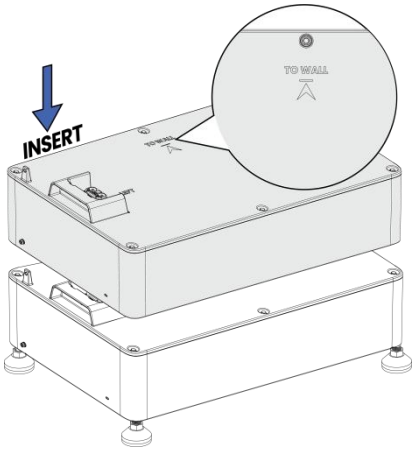
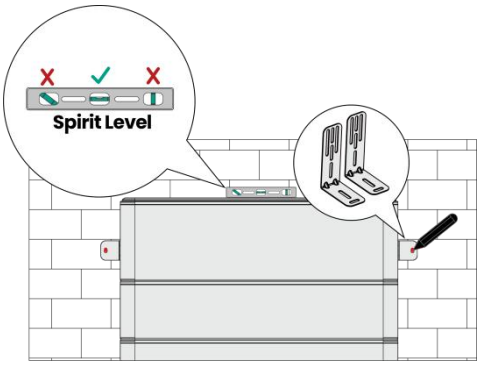
Marker

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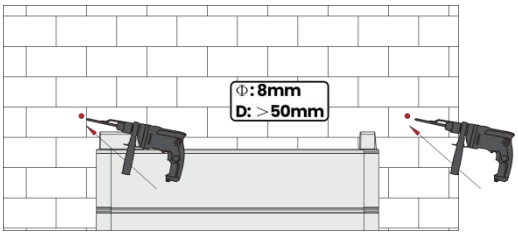
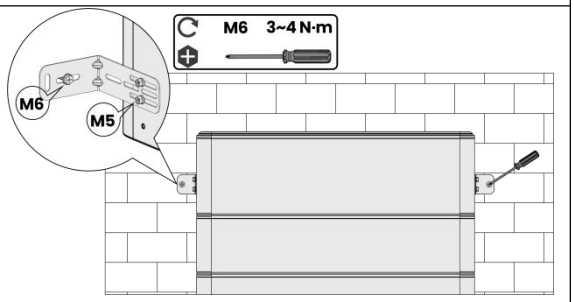
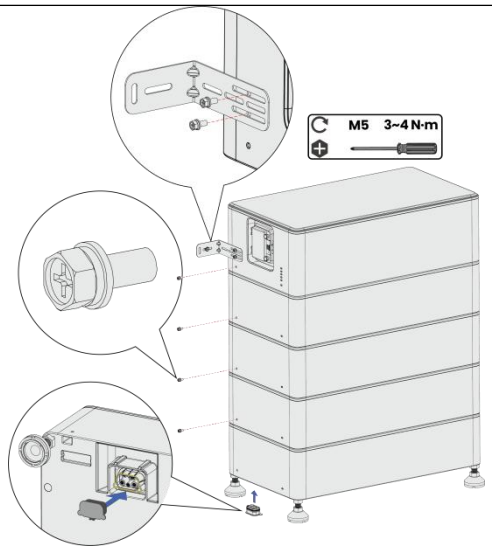
5.4 Installation Steps

⚠ Warning!

- Make sure that the inverter and battery is completely turned off before commencing installation.
- Do not connect different battery types together.

Procedures		
Step 1	Install the bottom battery module, level it using the footstand, and use a spirit level to verify that it is level.	
Step 2	Stack the battery modules one by one.	
Step 3	Before installing the CQ-M, use a level to check that it is level, and mark the installation locations for the fixing brackets with a marker.	

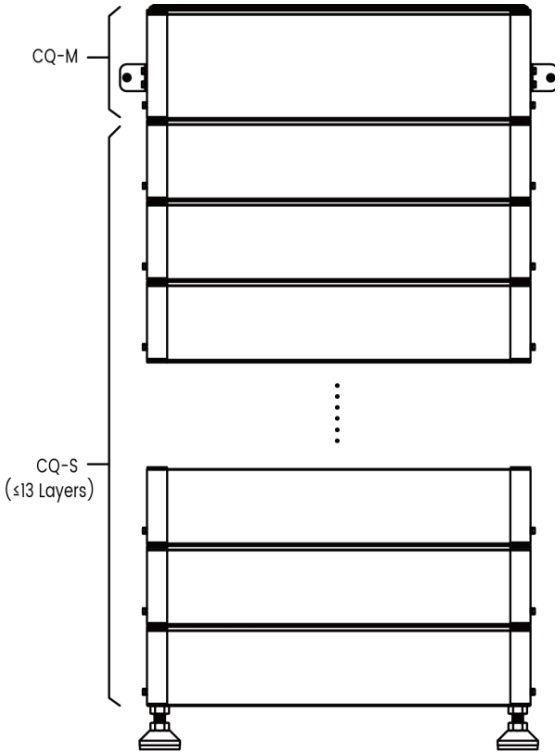
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<table>
<tr><td>Step 4</td><td>Before installing the CQ-M, drill holes at the marked locations.</td><td>
</td></tr>
<tr><td>Step 5</td><td>Install the fixing brackets to secure the battery to the wall.</td><td>
</td></tr>
<tr><td rowspan="3">Step 6</td><td colspan="2">Install the waterproof cover, tighten all battery module screws, and verify that the entire battery system is installed correctly.</td></tr>
<tr><td colspan="2">
</td></tr>
<tr><td colspan="2">Note:
● The screws must be installed.
● The waterproof cover must be installed.
● The ground must be able to support the weight of the battery. If installed outdoors, ensure the ground is hard and leveled.</td></tr>
</table>

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Note!

Please make sure each system including 1 CQ-M and n Support-pack. CQ-S less than 13(1~13) pieces.



Note!

Installation location Instructions for fixing brackets (Item C):

L : number of layers in the battery system.

- When L ≤ 6, a pair of Item C is installed on CQ-M;
- When L > 6, a pair of Item C is installed on CQ-M, and install an additional pair of Item C in the middle layer of the CQ-S modules.
- When 11 ≤ L ≤14, a pair of Item C is installed on CQ-M, and install 2 additional pairs of Item C on 5th layer and 10th layer CQ-S.

⚠ Warning!

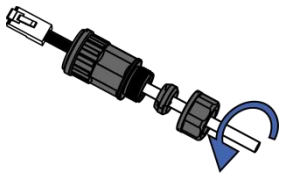
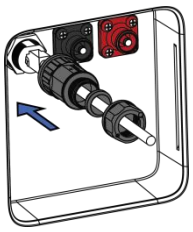
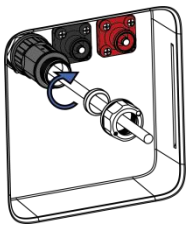
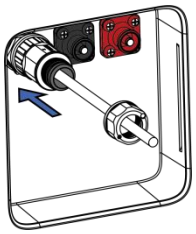
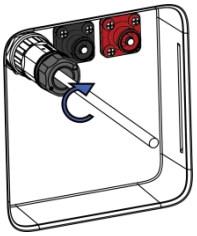
When used with an inverter, the battery system voltage must meet the inverter battery port voltage range.

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5.5 Wiring Steps

⚠ Warning!

Please use the side labeled BAT to connect to the battery and the side labeled INV to connect to the inverter.

A. Communication cable installation procedure		
Step 1	Open the tail lock wire nut.	
Step 2	Plug communication cable RJ45 into the battery CAN port.	
Step 3	Use an open-end spanner to lock the body onto the RJ45 board end connector; torque: 1.2±0.2N·m.	
Step 4	Install the sealing plug into the main.	
Step 5	Use an open-end spanner to lock the thread locking nut onto the main body.	

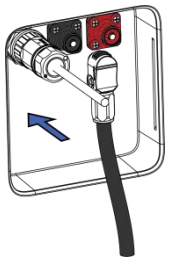
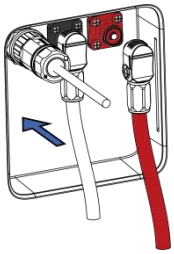
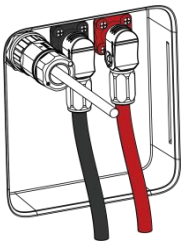
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⚠ Danger!

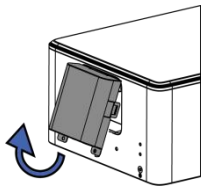
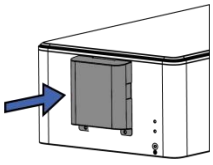
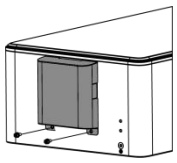
- Ensure that there is no short circuit of the terminals or with any external device.
- Do not connect the battery directly to inverter conductors or PV conductors. This will damage the battery and may result in explosion.

⚠ Warning!

- For the DC output cable, connect the end marked "DC+" and "DC-" to the battery, and connect the opposite end marked "BAT+" and "BAT-" to the inverter.
- Do not interchange the positive and negative terminals of the battery.

B. Power cable installation and fixing procedure		
Step 1	DC- output cable Installation.	
Step 2	DC+ output cable Installation.	
Step 3	DC output cable installation complete.	

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C. Protective cover installation procedure		
Step 1	Put the communication cable and DC output cable into the wire slot of the protective cover and, at the same time. tilt the protective cover at a certain angle so that the clip on the top is clicking in to the housing slot.	
Step 2	Press down on the protective cover so that the tabs on both sides snap into the slots.	
Step 3	Secure the protective cover with screws.	

Note!

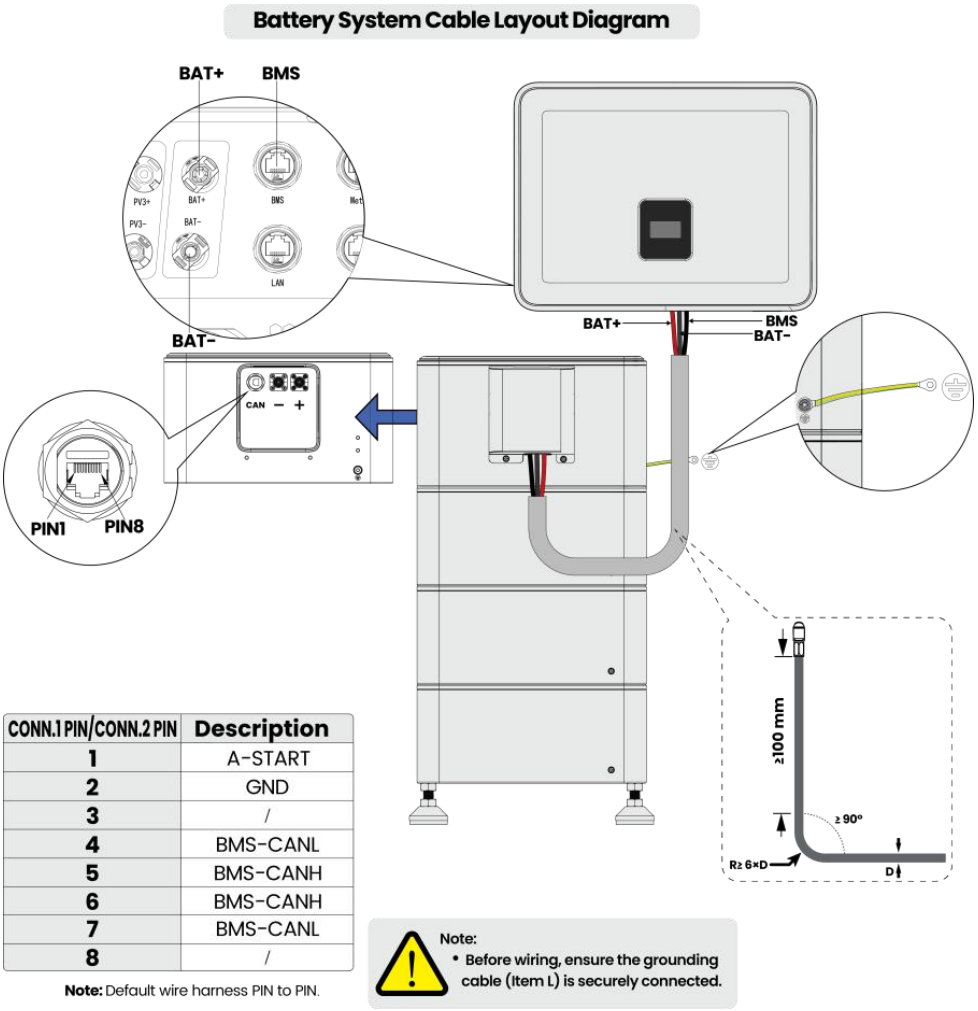
The protective cover is optional.

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Wiring between the battery and the inverter: Insert the connector at the other end of the cable into the BMS port at the base of the inverter and tighten securely.

Note!

Inverter wiring refer to the inverter user manual.



CONN.1 PIN/CONN.2 PIN	Description
1	A-START
2	GND
3	/
4	BMS-CANL
5	BMS-CANH
6	BMS-CANH
7	BMS-CANL
8	/

Note: Default wire harness PIN to PIN.

Note:
- Before wiring, ensure the grounding cable (item L) is securely connected.

⚠ Warning!

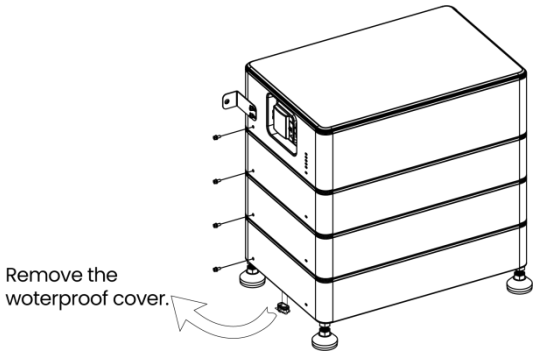
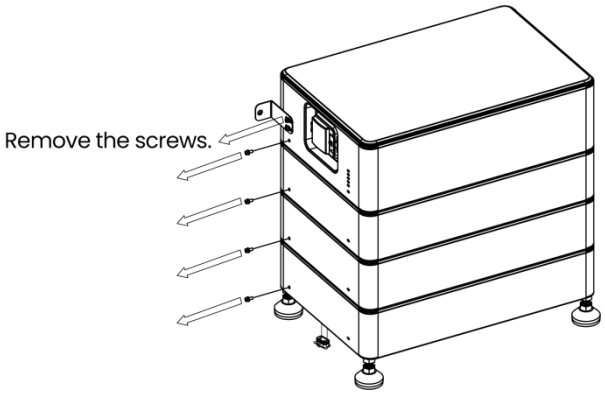
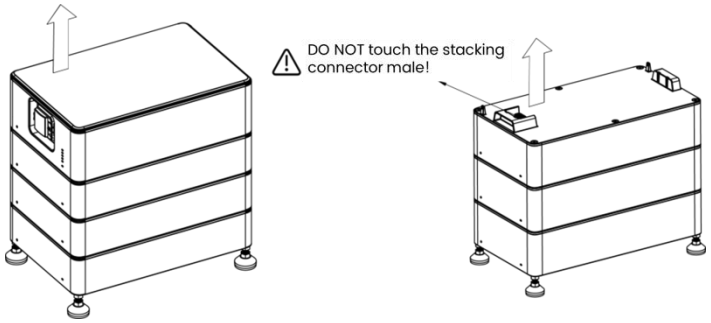
Please ensure the reliability of the battery ground cable.

⚠ Warning!

Make sure that the power cable connected to the battery is connected vertically and that the vertical length is greater than 30mm. If the cable is bent close to the terminals, it may cause poor line contact and result in burnt terminals.

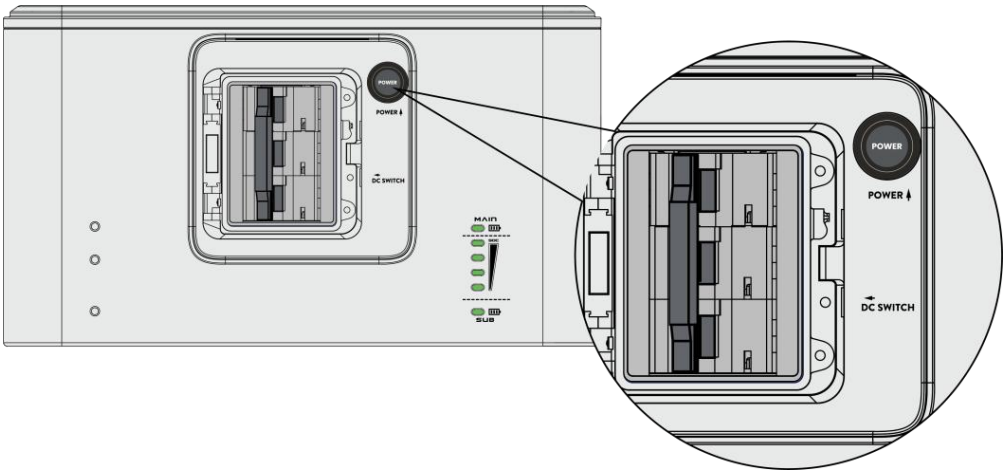
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5.6 Disassembly Steps

Procedures		
Step 1	**Shut down the battery system** First turn off the POWER Switch, and then turn off the DC Switch,all LEDs are off when POWER Switch is turned off. After shutting down the system, there is no current flow between the support units. Then disconnect the wiring harness connected to the inverter.	
Step 2	Remove the waterproof cover.	
Step 3	Remove the screws.	
Step 4	Remove the CQ-M and CQ-S modules, and store them properly.	

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6 System Operation



- When the grid connected system is started, the inverter should be turned on first to avoid the current pulse of the inverter increasing to the battery module.
- All installation and operation must comply with local electrical standards.
- Check all power cables and communication cables carefully.

6.1 System Start Up:

When the inverter is connected to the PV and the grid and both are operating normally, turn on the battery DC Switch. Press the POWER Switch and hold it for 3 seconds, then release. The Status LED is blinking green and indicates that the system is working normally.



6.2 System Shut Down:

Press and hold the POWER Switch for at least 5 seconds until all of the main battery LEDs (BMS Status LED and SOC LED) begin blinking. Once they start blinking， release the switch. The lights will automatically turn off after 5 seconds. Then, turn off the DC Switch.

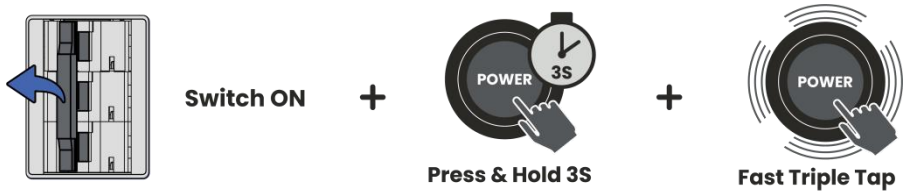


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6.3 System Black Start:

Under special circumstances when both PV and Grid power are out of order, the battery can be activated through the "Black Start" function. This means that our energy storage inverter and battery can continue to operate. The startup steps for Black Start are as follows:

- Turn on the DC Switch, press and hold the "POWER" button for 3 seconds, then release.
- Press the "POWER" button three times in succession within 4 seconds (Complete within 30 seconds after the battery system starts up).
- The Status LED remains solid green, indicating successful activation of Black Start mode.



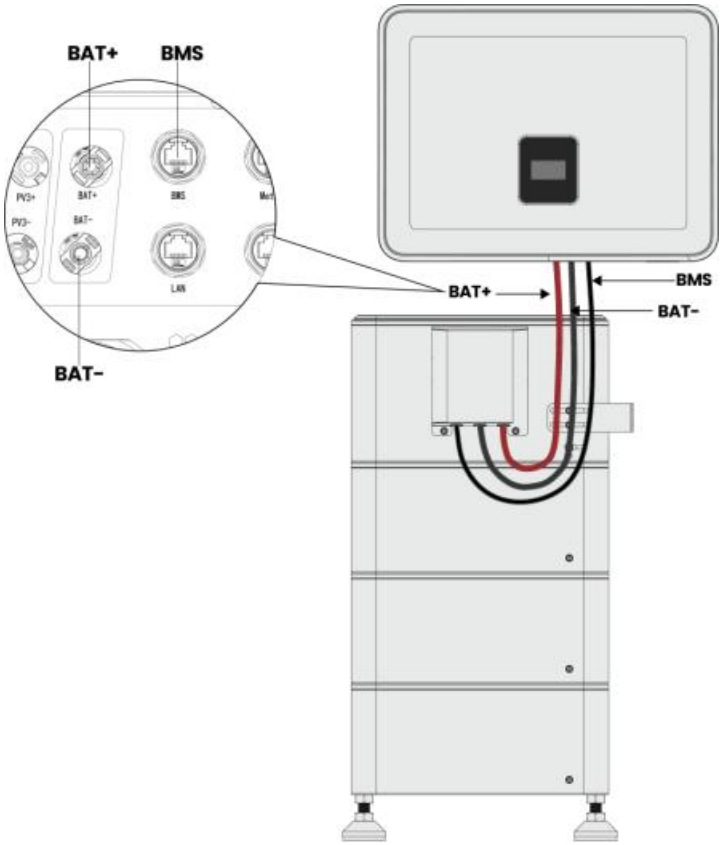
⚠ Warning!

Ensure correct battery-inverter connection prior to Black Start. No wiring modifications during black start.

6.4 Monitoring Methods

Once the system has been successfully installed and commissioned, communication between the battery and the inverter is functioning correctly, and the battery can be monitored and controlled by the inverter. End users can view the monitoring page via the FoxCloud APP or the FoxCloud Web platform.

Battery system cable layout diagram

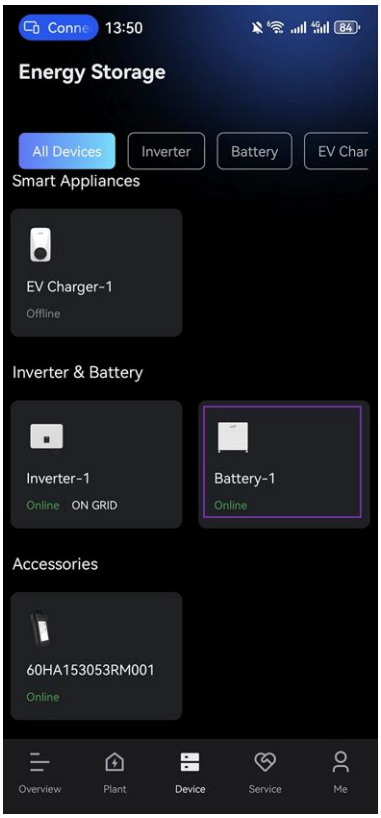


Note:

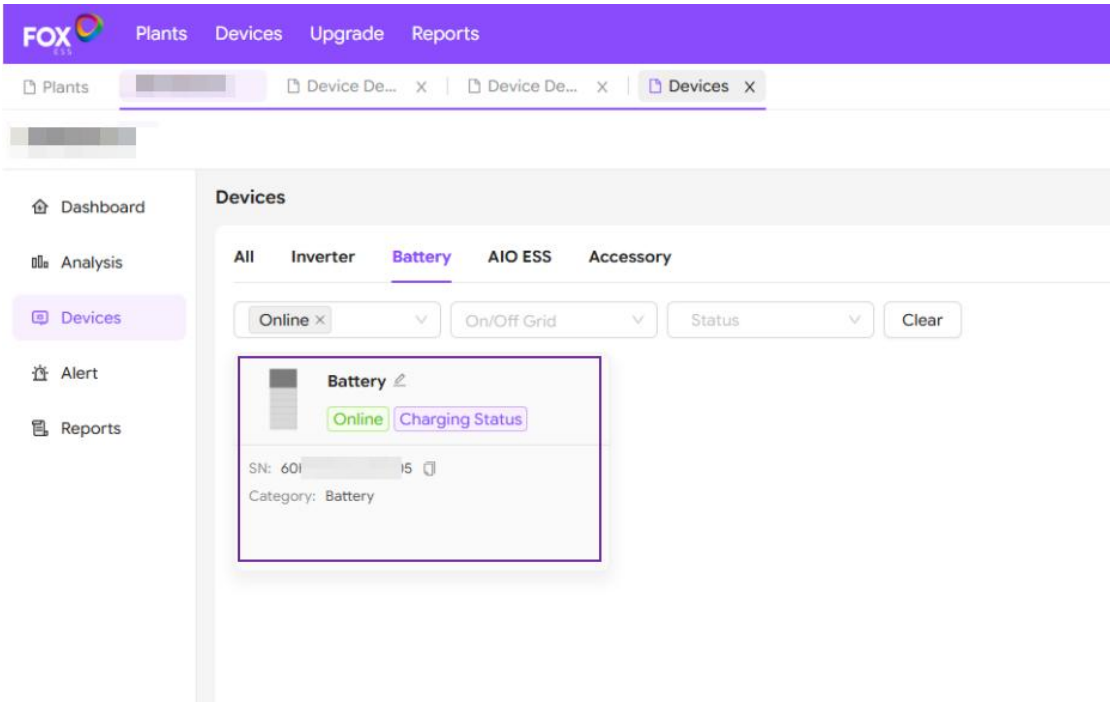
- Detailed information about the FoxCloud APP, please refer to the 《FoxCloud APP User Manual》.
- Detailed information about the FoxCloud Web platform, please refer to the relevant inverter manual.
- Terminal layout may vary between different inverters; the diagram above is for reference only. The actual wiring should be carried out in accordance with the manual for the specific inverter being used.

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FoxCloud APP interface example



FoxCloud Web platform interface example



Note!

The equipment details shown in the above images above are for reference only.

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7 Maintenance Guide

7.1 Routine Maintenance

Note!

- To ensure long-term accuracy of the State of Charge (SOC), it is recommended to perform a full SOC calibration at regular intervals (for example, every two weeks).
- This calibration is completed by charging the battery until the charging power reaches zero, allowing the system to correctly re-align the SOC reference.

⚠ Warning!

- Before performing any cleaning work, disconnect the system from all power sources.
- Clean the housing, cover, and display using a soft, dry cloth only.

To guarantee stable and reliable operation over the system's service life, it is strongly recommended to carry out routine maintenance checks as described in this section.

Check Items	Acceptance Criteria	Maintenance Interval
Battery cleanliness	The battery is free of dust and obstructions, ensuring proper heat dissipation.	Every 6~12 months
Battery visible damage	The battery shows no signs of damage or deformation.	Every 6 months
Battery operating status	1. The battery operates without abnormal noise. 2. All system parameters are correctly configured. This maintenance should be performed while the battery is running.	Every 6 months
Electrical connections	1. All cables are securely connected. 2. Cables are intact; in particular, cable jackets in contact with metallic surfaces show no scratches or damage. 3. Unused cable glands are sealed with rubber plugs and properly secured with pressure caps.	Perform the first inspection 6 months after initial commissioning. Thereafter, every 6~12 months.

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7.2 Troubleshooting

When the red / green LED on the panel is flashing or normally on, it does not mean that the CQ is abnormal, it may be just an alarm or protection. Please check the "LED status indicators" in chapter 8 for the detailed faulty definition before any troubleshooting steps. In general, the alarm indication is normal without manual intervention. When the alarm triggering state is removed, CQ will automatically return to normal use.

Problem determination based on the following points:

- Check if the red indicator light illuminates once the battery enters operation;
- Whether the buzzer in CQ-M on;
- Whether the battery system can be communicated with inverter;
- Whether the battery can be output voltage or not.

Preliminary determination steps

Battery system cannot work, when DC switch on and POWER on, the LED doesn't light up or flash, please contact the local distributor.

- The LED display of CQ-M and CQ-S is normal, but it cannot charge and discharge. Observe the display screen of inverter and there is no SOC. Please check whether the CAN communication between CQ-M to inverter is well connected. If the connection is good, please replace a CAN communication cable. If the SOC is still not visible on the inverter display screen, please contact the local distributor.
- After the battery system is powered on, if you can see the alarm information on the LED and inverter display screen at the same time, please contact the local distributor.

7.2.1 LED Indicators

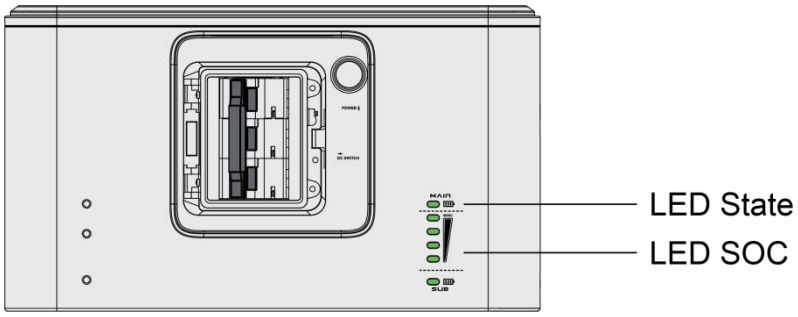
The operating status light on the left side of the battery pack shows its working status.

For CQ-S

Green LED	Red LED	Batteries Status
On for 0.5s, Off for 0.5s	On for 0.5s, Off for 0.5s	Running in boot
On for 0.1s, Off for 0.1s	On for 0.1s, Off for 0.1s	Upgrading
On for 1s, Off for 1s	Off	Normal Working
Off	On for 1s, Off for 1s	Alarm

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For CQ-M



SOC	System Status	LED State	LED SOC			
=100%	Standby	■	●	●	●	●
100% > SOC >= 75%		■	●	●	●	●
75% > SOC >= 50%		■	/	●	●	●
50% > SOC >= 25%		■	/	/	●	●
25% > SOC >= 0%		■	/	/	/	●
=100%	Discharge	●	●	●	●	●
100% > SOC >= 75%		●	●	●	●	●
75% > SOC >= 50%		●	/	●	●	●
50% > SOC >= 25%		●	/	/	●	●
25% > SOC >= 0%		●	/	/	/	●
=100%	Charge	●	■	■	■	■
100% > SOC >= 75%		●	■	■	■	■
75% > SOC >= 50%		●	/	■	■	■
50% > SOC >= 25%		●	/	/	■	■
25% > SOC >= 0%		●	/	/	/	■

7.2.2 Fault Indicators

Fault	LED State	LED SOC			
Under voltage fault	■	/	/	/	●
Over voltage fault	■	/	/	●	/
Over temperature fault	■	/	/	●	●
Under temperature fault	■	/	●	/	/
Discharge over current	■	/	●	/	●
Charge over current	■	/	●	●	/
Warm up film switch adhesion	■	/	●	●	●
Reserve	■	●	/	/	/
Pre-Charge failed	■	●	/	/	●
Short circuit Protection	■	●	/	●	/

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AFE communication failed	■	●	/	●	●
Module Addressing failed	■	●	●	/	/
IVU Communication failed	■	●	●	/	●
BMU Communication failed	■	●	●	●	/
PCS Communication failed	■	●	●	●	●
HVB FUSE fault	●	/	/	/	●
Module FUSE fault	●	/	/	●	/
Module matching fault	●	/	/	●	●
Internal total voltage sampling failed	●	/	●	/	/
Temperature sampling failed	●	/	●	/	●
Relay adhesion	●	/	●	●	/
Relay Not Close	●	/	●	●	●
Relay drive failed	●	●	/	/	/
Single Cell "0V" fault	●	●	/	/	●
Temperature high permanent failed	●	●	/	●	/
The Single voltage high permanently failed	●	●	/	●	●
SOH low protection	●	●	●	/	/
AFE failed (UV/OV/UT/OT)	●	●	●	/	●
Shutdown failed	●	●	●	●	/
Other fault	●	●	●	●	●

Remark:

■: LED flash display (on: 0.5s, off: 0.5s)

●: LED on display

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7.3 FAQ

7.3.1 Expanded capacity requirement

If a battery is replaced or added for capacity expansion, each battery's SOC should be consistent. The max. SOC difference should be between±5%.

If users want to increase their battery system capacity, please ensure that the SOC of the existing system capacity is about 50%. The manufacturer date of the new battery shall not exceed 12 months; in case of exceeding 12 months. please charge the new battery to around 50%.

7.3.2 Storage with Low SOC

After the battery is powered off, static power consumption and self-discharge loss may occur in internal modules. Therefore, charge batteries in a timely manner and do not store the battery in low SOC. Otherwise, the battery may be damaged due to overdischarge, and battery modules need to be replaced.

Storage in low SOC may occur in the following scenarios:

- The DC SWITCH on the power control module is OFF.
- The power cables or signal cables are not connected.
- The batteries cannot be charged due to a system fault after discharge.
- The batteries cannot be charged due to incorrect configurations in the system.
- The batteries cannot be charged due to no PV input and long-term mains failure.

Regardless of scenarios, the batteries must be charged within the longest interval corresponding to the SOC when the batteries are powered off. If the batteries are not charged within the specified interval, they may be damaged due to over discharge.

Storage environment temperature	Power-Off SOC Before Storage	Maximum Charge Interval
0~35℃	0% ≤ SOC < 5%	7 days

Note!

When the battery SOC decreases to 0%, charge the batteries within 7 days. Permanent battery faults caused by delayed charge due to customer reasons are beyond the warranty scope.

7.3.3 Low-Temperature Battery Reserve

To prevent battery drain and potential damage in freezing weather, the system includes an automatic low-temperature protection feature. It proactively manages the battery to maintain adequate charge, extending standby time when temperatures drop.

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8 Product Specification

8.1 CQ6 Specifications

8.1.1 CQ6-S Specifications

Specifications for CQ6-S	
Model No.	CQ6-S
Max. charge/discharge current (A)	100
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	104
Nominal energy (kWh)	5.99
Battery voltage range (V)	52.2~65.7
Recommend charge/discharge current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Battery pack round-trip efficiency(%)	95
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤2000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	48.8±5%
Communication interfaces	CAN

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8.1.2 CQ6-M Specifications

Specifications for CQ6-M	
Model No.	CQ6-M
Max. charge/discharge current (A)	100
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	104
Nominal energy (kWh)	5.99
Battery voltage range (V)	52.2~65.7
Recommend charge/discharge current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Battery pack round-trip efficiency(%)	95
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤2000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	54.0±5%
Communication interfaces	CAN

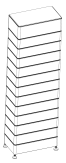
8.1.3 Battery System Specifications for CQ6-Lx, (x=2~14)

Specifications for CQ6							
Model No.	CQ6-L2	CQ6-L3	CQ6-L4	CQ6-L5	CQ6-L6	CQ6-L7	CQ6-L8
Technical Properties							
Battery designation	IFpP53/149/113[(18S)2S]M/-10+50/90	IFpP53/149/113[(18S)3S]M/-10+50/90	IFpP53/149/113[(18S)4S]M/-10+50/90	IFpP53/149/113[(18S)5S]M/-10+50/90	IFpP53/149/113[(18S)6S]M/-10+50/90	IFpP53/149/113[(18S)7S]M/-10+50/90	IFpP53/149/113[(18S)8S]M/-10+50/90
The number of batteries	1CQ6-M +1CQ6-S	1CQ6-M +2CQ6-S	1CQ6-M +3CQ6-S	1CQ6-M +4CQ6-S	1CQ6-M +5CQ6-S	1CQ6-M +6CQ6-S	1CQ6-M +7CQ6-S
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8
Nominal energy (kWh)	11.98	17.97	23.96	29.95	35.94	41.93	47.92
Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6

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Rated capacity (Ah)	104						
Recommend charge/discharge current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Max. charge/discharge current (A)	100						
Peak discharge Current (60s) (A)	120						
Battery pack round-trip efficiency(%)	95						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55						
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 104@25±2℃ @1/3C; 104@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	102.8±5%	151.6±5%	200.4±5%	249.2±5%	298.0±5%	346.8±5%	395.6±5%
Communication interfaces	CAN						

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Specifications for CQ6						
Model No.	CQ6-L9	CQ6-L10	CQ6-L11	CQ6-L12	CQ6-L13	CQ6-L14
Technical Properties						
Battery designation	IFpP53/149/113[(18S)9S]M/-10+50/90	IFpP53/149/113[(18S)10S]M/-10+50/90	IFpP53/149/113[(18S)11S]M/-10+50/90	IFpP53/149/113[(18S)12S]M/-10+50/90	IFpP53/149/113[(18S)13S]M/-10+50/90	IFpP53/149/113[(18S)14S]M/-10+50/90
The number of batteries	1CQ6-M+8CQ6-S	1CQ6-M+9CQ6-S	1CQ6-M+10CQ6-S	1CQ6-M+11CQ6-S	1CQ6-M+12CQ6-S	1CQ6-M+13CQ6-S
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Nominal energy (kWh)	53.91	59.90	65.89	71.88	77.87	83.86
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Rated capacity (Ah)	104					
Recommend charge/discharge current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Max. charge/discharge current (A)	100					
Peak discharge Current (60s) (A)	120					
Battery pack round-trip efficiency(%)	95					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55					
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 104@25±2℃ @1/3C; 104@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class Ⅰ					
Dimensions (W*H*D) (mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	444.4±5%	493.2±5%	542.0±5%	590.8±5%	639.6±5%	688.4±5%
Communication interfaces	CAN					

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8.2 CQ6 (w) Specifications

8.2.1 CQ6-S (w) Specifications

Specifications for CQ6-S (w)	
Model No.	CQ6-S (w)
Max. charge/discharge current (A)	100
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	104
Nominal energy (kWh)	5.99
Battery voltage range (V)	52.2~65.7
Recommend charge/discharge current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Battery pack round-trip efficiency(%)	95
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤2000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	48.8±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

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8.2.2 CQ6-M (w) Specifications

Specifications for CQ6-M (w)	
Model No.	CQ6-M (w)
Max. charge/discharge current (A)	100
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	104
Nominal energy (kWh)	5.99
Battery voltage range (V)	52.2~65.7
Recommend charge/discharge current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Battery pack round-trip efficiency(%)	95
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤2000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	54.0±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

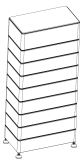
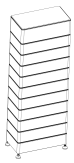
8.2.3 Battery System Specifications for CQ6-Lx (w), (x=2~14)

Specifications for CQ6 (w)							
Model No.	CQ6-L2 (w)	CQ6-L3 (w)	CQ6-L4 (w)	CQ6-L5 (w)	CQ6-L6 (w)	CQ6-L7 (w)	CQ6-L8 (w)
Technical Properties							
Battery designation	IFpP53/149/113[(18S)2S]M/-10+50/90	IFpP53/149/113[(18S)3S]M/-10+50/90	IFpP53/149/113[(18S)4S]M/-10+50/90	IFpP53/149/113[(18S)5S]M/-10+50/90	IFpP53/149/113[(18S)6S]M/-10+50/90	IFpP53/149/113[(18S)7S]M/-10+50/90	IFpP53/149/113[(18S)8S]M/-10+50/90
The number of batteries	1CQ6-M (w)+1CQ6-S (w)	1CQ6-M (w)+2CQ6-S (w)	1CQ6-M (w)+3CQ6-S (w)	1CQ6-M (w)+4CQ6-S (w)	1CQ6-M (w)+5CQ6-S (w)	1CQ6-M (w)6CQ6-S (w)	1CQ6-M (w)+7CQ6-S (w)
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8
Nominal energy (kWh)	11.98	17.97	23.96	29.95	35.94	41.93	47.92

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Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6
Rated capacity (Ah)	104						
Recommend charge/discharge current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Max. charge/discharge current (A)	100						
Peak discharge Current (60s) (A)	120						
Battery pack round-trip efficiency(%)	95						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55						
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 104@25±2℃ @1/3C; 104@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class I						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	102.8±5%	151.6±5%	200.4±5%	249.2±5%	298.0±5%	346.8±5%	395.6±5%
Communication interfaces	CAN						
*1 warm up function off *2 warm up function on							

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Specifications for CQ6						
Model No.	CQ6-L9 (w)	CQ6-L10 (w)	CQ6-L11 (w)	CQ6-L12 (w)	CQ6-L13 (w)	CQ6-L14 (w)
Technical Properties						
Battery designation	IFpP53/149/113[(18S)9S]M/-10+50/90	IFpP53/149/113[(18S)10S]M/-10+50/90	IFpP53/149/113[(18S)11S]M/-10+50/90	IFpP53/149/113[(18S)12S]M/-10+50/90	IFpP53/149/113[(18S)13S]M/-10+50/90	IFpP53/149/113[(18S)14S]M/-10+50/90
The number of batteries	1CQ6-M (w) +8CQ6-S (w)	1CQ6-M (w) +9CQ6-S (w)	1CQ6-M (w) +10CQ6-S (w)	1CQ6-M (w) +11CQ6-S (w)	1CQ6-M (w) +12CQ6-S (w)	1CQ6-M (w) +13CQ6-S (w)
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Nominal energy (kWh)	53.91	59.90	65.89	71.88	77.87	83.86
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Rated capacity (Ah)	104					
Recommend charge/discharge current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Max. charge/discharge current (A)	100					
Peak discharge Current (60s) (A)	120					
Battery pack round-trip efficiency(%)	95					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55					
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 104@25±2℃ @1/3C; 104@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class I					
Dimensions (W*H*D)(mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	444.4±5%	493.2±5%	542.0±5%	590.8±5%	639.6±5%	688.4±5%
Communication interfaces	CAN					
*1 warm up function off *2 warm up function on						

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8.3 CQ6.6 (w) Specifications

8.3.1 CQ6.6-S (w) Specifications

Specifications for CQ6.6-S (w)	
Model No.	CQ6.6-S (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	115
Nominal energy (kWh)	6.62
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	50.5±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

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8.3.2 CQ6.6-M (w) Specifications

Specifications for CQ6.6-M (w)	
Model No.	CQ6.6-M (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	115
Nominal energy (kWh)	6.62
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	55.0±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

8.3.3 Battery System Specifications for CQ6.6-Lx (w), (x=2~14)

Specifications for CQ6.6 (w)							
Model No.	CQ6.6-L2 (w)	CQ6.6-L3 (w)	CQ6.6-L4 (w)	CQ6.6-L5 (w)	CQ6.6-L6 (w)	CQ6.6-L7 (w)	CQ6.6-L8 (w)
Technical Properties							
Battery designation	IFpP53/150/120[(18S)2S]M/-10+50/90	IFpP53/150/120[(18S)3S]M/-10+50/90	IFpP53/150/120[(18S)4S]M/-10+50/90	IFpP53/150/120[(18S)5S]M/-10+50/90	IFpP53/150/120[(18S)6S]M/-10+50/90	IFpP53/150/120[(18S)7S]M/-10+50/90	IFpP53/150/120[(18S)8S]M/-10+50/90
The number of batteries	1CQ6.6-M (w) +1CQ6.6-S (w)	1CQ6.6-M (w) +2CQ6.6-S(w)	1CQ6.6-M (w) +3CQ6.6-S(w)	1CQ6.6-M (w) +4CQ6.6-S(w)	1CQ6.6-M (w) +5CQ6.6-S(w)	1CQ6.6-M (w) +6CQ6.6-S(w)	1CQ6.6-M (w) +7CQ6.6-S(w)
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8

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Rated capacity (Ah)	115	115	115	115	115	115	115
Nominal energy (kWh)	13.24	19.86	26.48	33.10	39.72	46.34	52.96
Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6
Max. charge/discharge current (A)	80/80						
(CC-CV) Standard charging current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Peak discharge Current (60s) (A)	120						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55*¹ -25~55/-25~55*²						
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 115@25±2℃ @1/3C; 115@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	105.5±5%	156.0±5%	206.5±5%	257±5%	307.5±5%	358±5%	408.5±5%
Communication interfaces	CAN						
*¹ warm up function off *² warm up function on							

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Specifications for CQ6.6 (w)						
Model No.	CQ6.6-L9 (w)	CQ6.6-L10 (w)	CQ6.6-L11 (w)	CQ6.6-L12 (w)	CQ6.6-L13 (w)	CQ6.6-L14 (w)
Technical Properties						
Battery designation	IFpP53/150/120[(18S)9S]M/-10 +50/90	IFpP53/150/120[(18S)10S]M/-10 +50/90	IFpP53/150/120[(18S)11S]M/-10 +50/90	IFpP53/150/120[(18S)12S]M/-10 +50/90	IFpP53/150/120[(18S)13S]M/-10 +50/90	IFpP53/150/120[(18S)14S]M/-10 +50/90
The number of batteries	1CQ6.6-M (w) +8CQ6.6-S (w)	1CQ6.6-M (w) +9CQ6.6-S (w)	1CQ6.6-M (w) +10CQ6.6-S (w)	1CQ6.6-M (w) +11CQ6.6-S (w)	1CQ6.6-M (w) +12CQ6.6-S (w)	1CQ6.6-M (w) +13CQ6.6-S (w)
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Rated capacity (Ah)	115	115	115	115	115	115
Nominal energy (kWh)	59.58	66.20	72.82	79.44	86.06	92.68
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Max. charge/discharge current (A)	80/80					
(CC-CV) Standard charging current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Peak discharge Current (60s) (A)	120					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55*1 -25~55/-25~55*2					
Discharge capacity (Ah)	90@-20±2℃ @1/3C ; 115@25±2℃ @1/3C; 115@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class I					
Dimensions (W*H*D)(mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	459±5%	509.5±5%	560±5%	610.5±5%	661±5%	711.5±5%
Communication interfaces	CAN					
*1 warm up function off *2 warm up function on						

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8.4 CQ7 Specifications

8.4.1 CQ7-S Specifications

Specifications for CQ7-S	
Model No.	CQ7-S
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	121
Nominal energy (kWh)	6.96
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	50.5*(1±5%)
Communication interfaces	CAN

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8.4.2 CQ7-M Specifications

Specifications for CQ7-M	
Model No.	CQ7-M
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	121
Nominal energy (kWh)	6.96
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	55*(1±5%)
Communication interfaces	CAN

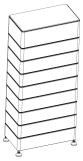
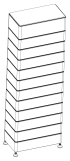
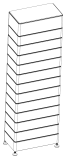
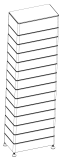
8.4.3 Battery System Specifications for CQ7-Lx, (x=2~14)

Specifications for CQ7							
Model No.	CQ7-L2	CQ7-L3	CQ7-L4	CQ7-L5	CQ7-L6	CQ7-L7	CQ7-L8
Technical Properties							
Battery designation	IFpP53/150/120[(18S)2S]M/-10+50/90	IFpP53/150/120[(18S)3S]M/-10+50/90	IFpP53/150/120[(18S)4S]M/-10+50/90	IFpP53/150/120[(18S)5S]M/-10+50/90	IFpP53/150/120[(18S)6S]M/-10+50/90	IFpP53/150/120[(18S)7S]M/-10+50/90	IFpP53/150/120[(18S)8S]M/-10+50/90
The number of batteries	1CQ7-M +1CQ7-S	1CQ7-M +2CQ7-S	1CQ7-M +3CQ7-S	1CQ7-M +4CQ7-S	1CQ7-M +5CQ7-S	1CQ7-M +6CQ7-S	1CQ7-M +7CQ7-S
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8
Rated capacity (Ah)	121	121	121	121	121	121	121

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Nominal energy (kWh)	13.92	20.88	27.84	34.80	41.76	48.72	55.68
Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6
Max. charge/discharge current (A)	80/80						
(CC-CV) Standard charging current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Peak discharge Current (60s) (A)	120						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55						
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 121@25±2℃ @1/3C; 121@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	105.5(1±5%)	156(1±5%)	206.5(1±5%)	257(1±5%)	307.5(1±5%)	358(1±5%)	408.5(1±5%)
Communication interfaces	CAN						

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Specifications for CQ7						
Model No.	CQ7-L9	CQ7-L10	CQ7-L11	CQ7-L12	CQ7-L13	CQ7-L14
Technical Properties						
Battery designation	IFpP53/150/120[(18S)9S]M/-10+50/90	IFpP53/150/120[(18S)10S]M/-10+50/90	IFpP53/150/120[(18S)11S]M/-10+50/90	IFpP53/150/120[(18S)12S]M/-10+50/90	IFpP53/150/120[(18S)13S]M/-10+50/90	IFpP53/150/120[(18S)14S]M/-10+50/90
The number of batteries	1CQ7-M +8CQ7-S	1CQ7-M +9CQ7-S	1CQ7-M +10CQ7-S	1CQ7-M +11CQ7-S	1CQ7-M +12CQ7-S	1CQ7-M +13CQ7-S
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Rated capacity (Ah)	121	121	121	121	121	121
Nominal energy (kWh)	62.64	69.60	76.56	83.52	90.48	97.44
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Max. charge/discharge current (A)	80/80					
(CC-CV) Standard charging current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Peak discharge Current (60s) (A)	120					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55					
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 121@25±2℃ @1/3C; 121@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class Ⅰ					
Dimensions (W*H*D) (mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	459(1±5%)	509.5(1±5%)	560(1±5%)	610.5(1±5%)	661(1±5%)	711.5(1±5%)
Communication interfaces	CAN					

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8.5 CQ7 (w) Specifications

8.5.1 CQ7-S (w) Specifications

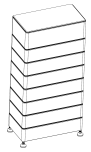
Specifications for CQ7-S (w)	
Model No.	CQ7-S (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	121
Nominal energy (kWh)	6.96
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*DH) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	50.5*(1±5%)
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

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8.5.2 CQ7-M (w) Specifications

Specifications for CQ7-M (w)	
Model No.	CQ7-M (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	121
Nominal energy (kWh)	6.96
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	55*(1±5%)
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

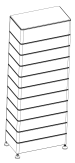
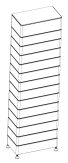
8.5.3 Battery System Specifications for CQ7-Lx (w), (x=2~14)

Specifications for CQ7 (w)							
Model No.	CQ7-L2 (w)	CQ7-L3 (w)	CQ7-L4 (w)	CQ7-L5 (w)	CQ7-L6 (w)	CQ7-L7 (w)	CQ7-L8 (w)
Technical Properties							
Battery designation	IFpP53/150/120[(18S)2S]M/--10+50/90	IFpP53/150/120[(18S)3S]M/--10+50/90	IFpP53/150/120[(18S)4S]M/--10+50/90	IFpP53/150/120[(18S)5S]M/--10+50/90	IFpP53/150/120[(18S)6S]M/--10+50/90	IFpP53/150/120[(18S)7S]M/--10+50/90	IFpP53/150/120[(18S)8S]M/--10+50/90
The number of batteries	1CQ7-M (w) +1CQ7-S (w)	1CQ7-M (w) +2CQ7-S (w)	1CQ7-M (w) +3CQ7-S (w)	1CQ7-M (w) +4CQ7-S (w)	1CQ7-M (w) +5CQ7-S (w)	1CQ7-M (w) +6CQ7-S (w)	1CQ7-M (w) +7CQ7-S (w)
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8
Rated capacity (Ah)	121	121	121	121	121	121	121
Nominal energy (kWh)	13.92	20.88	27.84	34.80	41.76	48.72	55.68
Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6

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Max. charge/discharge current (A)	80/80						
(CC-CV) Standard charging current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Peak discharge Current (60s) (A)	120						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55*¹ -25~55/-25~55*²						
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 121@25±2℃ @1/3C; 121@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*DH) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	105.5(1±5%)	156(1±5%)	206.5(1±5%)	257(1±5%)	307.5(1±5%)	358(1±5%)	408.5(1±5%)
Communication interfaces	CAN						
*¹ warm up function off *² warm up function on							

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Specifications for CQ7 (w)						
Model No.	CQ7-L9 (w)	CQ7-L10 (w)	CQ7-L11 (w)	CQ7-L12 (w)	CQ7-L13 (w)	CQ7-L14 (w)
Technical Properties						
Battery designation	IFpP53/150/120[(18S)9S]M/-10+50/90	IFpP53/150/120[(18S)10S]M/-10+50/90	IFpP53/150/120[(18S)11S]M/-10+50/90	IFpP53/150/120[(18S)12S]M/-10+50/90	IFpP53/150/120[(18S)13S]M/-10+50/90	IFpP53/150/120[(18S)14S]M/-10+50/90
The number of batteries	1CQ7-M (w) +8CQ7-S (w)	1CQ7-M (w) +9CQ7-S (w)	1CQ7-M (w) +10CQ7-S (w)	1CQ7-M (w) +11CQ7-S (w)	1CQ7-M (w) +12CQ7-S (w)	1CQ7-M (w) +13CQ7-S (w)
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Rated capacity (Ah)	121	121	121	121	121	121
Nominal energy (kWh)	62.64	69.60	76.56	83.52	90.48	97.44
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Max. charge/discharge current (A)	80/80					
(CC-CV) Standard charging current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Peak discharge Current (60s) (A)	120					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55*¹ -25~55/-25~55*²					
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 121@25±2℃ @1/3C; 121@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class Ⅰ					
Dimensions (W*H*D)(mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	459(1±5%)	509.5(1±5%)	560(1±5%)	610.5(1±5%)	661(1±5%)	711.5(1±5%)
Communication interfaces	CAN					
*¹ warm up function off *² warm up function on						

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8.6 CQ7-80 Specifications

8.6.1 CQ7-S-80 Specifications

Specifications for CQ7-S-80	
Model No.	CQ7-S-80
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	122
Nominal energy (kWh)	7.02
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	50.5±5%
Communication interfaces	CAN

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8.6.2 CQ7-M-80 Specifications

Specifications for CQ7-M-80	
Model No.	CQ7-M-80
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	122
Nominal energy (kWh)	7.02
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	55.0±5%
Communication interfaces	CAN

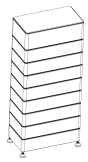
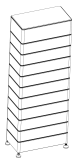
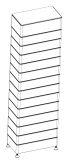
8.6.3 Battery System Specifications for CQ7-80-Lx, (x=2~14)

Specifications for CQ7-80							
Model No.	CQ7-80-L2	CQ7-80-L3	CQ7-80-L4	CQ7-80-L5	CQ7-80-L6	CQ7-80-L7	CQ7-80-L8
Technical Properties							
Battery designation	IFpP53/150/120[(18S)2S]M/-10+50/90	IFpP53/150/120[(18S)3S]M/-10+50/90	IFpP53/150/120[(18S)4S]M/-10+50/90	IFpP53/150/120[(18S)5S]M/-10+50/90	IFpP53/150/120[(18S)6S]M/-10+50/90	IFpP53/150/120[(18S)7S]M/-10+50/90	IFpP53/150/120[(18S)8S]M/-10+50/90
The number of batteries	1CQ7-M-80 +1CQ7-S-80	1CQ7-M-80 +2CQ7-S-80	1CQ7-M-80 +3CQ7-S-80	1CQ7-M-80 +4CQ7-S-80	1CQ7-M-80 +5CQ7-S-80	1CQ7-M-80 +6CQ7-S-80	1CQ7-M-80 +7CQ7-S-80
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8
Rated capacity (Ah)	122	122	122	122	122	122	122
Nominal energy (kWh)	14.04	21.06	28.08	35.10	42.12	49.14	56.16

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Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6
Max. charge/discharge current (A)	80/80						
(CC-CV) Standard charging current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Peak discharge Current (60s) (A)	120						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55						
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 122@25±2℃ @1/3C; 122@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	105.5±5%	156.0±5%	206.5±5%	257±5%	307.5±5%	358±5%	408.5±5%
Communication interfaces	CAN						

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Specifications for CQ7-80						
Model No.	CQ7-80-L9	CQ7-80-L10	CQ7-80-L11	CQ7-80-L12	CQ7-80-L13	CQ7-80-L14
Technical Properties						
Battery designation	IFpP53/150/120[(18S)9S]M/-10+50/90	IFpP53/150/120[(18S)10S]M/-10+50/90	IFpP53/150/120[(18S)11S]M/-10+50/90	IFpP53/150/120[(18S)12S]M/-10+50/90	IFpP53/150/120[(18S)13S]M/-10+50/90	IFpP53/150/120[(18S)14S]M/-10+50/90
The number of batteries	1CQ7-M-80 +8CQ7-S-80	1CQ7-M-80 +9CQ7-S-80	1CQ7-M-80 +10CQ7-S-80	1CQ7-M-80 +11CQ7-S-80	1CQ7-M-80 +12CQ7-S-80	1CQ7-M-80 +13CQ7-S-80
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Rated capacity (Ah)	122	122	122	122	122	122
Nominal energy (kWh)	63.18	70.20	77.22	84.24	91.26	98.28
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Max. charge/discharge current (A)	80/80					
(CC-CV) Standard charging current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Peak discharge Current (60s) (A)	65					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55					
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 122@25±2℃ @1/3C; 122@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class Ⅰ					
Dimensions (W*H*D) (mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	459±5%	509.5±5%	560±5%	610.5±5%	661±5%	711.5±5%
Communication interfaces	CAN					

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8.7 CQ7-80 (w) Specifications

8.7.1 CQ7-S-80 (w) Specifications

Specifications for CQ7-S-80 (w)	
Model No.	CQ7-S-80 (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	122
Nominal energy (kWh)	7.02
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*190*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	50.5±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

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8.7.2 CQ7-M-80 (w) Specifications

Specifications for CQ7-M-80 (w)	
Model No.	CQ7-M-80 (w)
Max. charge/discharge current (A)	80
Operating charge/discharge temperature (℃)	0~55/-10~55[*1] -25~55/-25~55[*2]
Storage temperature (℃)	-10~50
Humidity (%)	5~95(No Condensing)
Nominal voltage (V)	57.6
Rated capacity (Ah)	122
Nominal energy (kWh)	7.02
Battery voltage range (V)	52.2~65.7
Max. Continuous discharge/charge current (A)	80/80
(CC-CV) Standard charging current (A)	50
Short circuit current (kA)	2.9
Constant current and voltage charging cut-off current (A)	2
Depth of discharge(%)	90
Peak discharge current (60s) (A)	120
Altitude (m)	≤3000
Dimensions (W*H*D) (mm)	660*205*360
Tolerance (W*H*D) (mm)	±3/±3/±3
Weight (kg)	55.0±5%
Communication interfaces	CAN
[*1]warm up function off [*2]warm up function on	

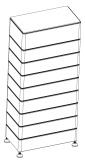
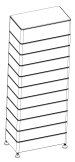
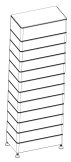
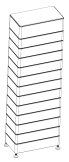
8.7.3 Battery System Specifications for CQ7-80 (w)-Lx (w), (x=2~14)

Specifications for CQ7-80 (w)							
Model No.	CQ7-80-L2 (w)	CQ7-80-L3 (w)	CQ7-80-L4 (w)	CQ7-80-L5 (w)	CQ7-80-L6 (w)	CQ7-80-L7 (w)	CQ7-80-L8 (w)
Technical Properties							
Battery designation	IFpP53/150/120[(18S)2S]M/-10+50/90	IFpP53/150/120[(18S)3S]M/-10+50/90	IFpP53/150/120[(18S)4S]M/-10+50/90	IFpP53/150/120[(18S)5S]M/-10+50/90	IFpP53/150/120[(18S)6S]M/-10+50/90	IFpP53/150/120[(18S)7S]M/-10+50/90	IFpP53/150/120[(18S)8S]M/-10+50/90
The number of batteries	1CQ7-M-80 (w) +1CQ7-S-80 (w)	1CQ7-M-80 (w) +2CQ7-S-80 (w)	1CQ7-M-80 (w) +3CQ7-S-80 (w)	1CQ7-M-80 (w) +4CQ7-S-80 (w)	1CQ7-M-80 (w) +5CQ7-S-80 (w)	1CQ7-M-80 (w) +6CQ7-S-80 (w)	1CQ7-M-80 (w) +7CQ7-S-80 (w)
Nominal voltage (V)	115.2	172.8	230.4	288.0	345.6	403.2	460.8

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Rated capacity (Ah)	122	122	122	122	122	122	122
Nominal energy (kWh)	14.04	21.06	28.08	35.10	42.12	49.14	56.16
Battery voltage range (V)	104.4~131.4	156.6~197.1	208.8~262.8	261.0~328.5	313.2~394.2	365.4~459.9	417.6~525.6
Max. charge/discharge current (A)	80/80						
(CC-CV) Standard charging current (A)	50						
Constant current and constant voltage charging cut-off current (A)	2						
Peak discharge Current (60s) (A)	120						
Depth of discharge(%)	90						
Storage temperature (℃)	-10~50						
Operating charge/discharge temperature (℃)	0~55/-10~55*¹ -25~55/-25~55*²						
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 122@25±2℃ @1/3C; 122@55±2℃ @1/3C						
Cycle life	≥6000 @25℃ @ 70%SOH						
Ingress protection	IP65						
Protective class	Class Ⅰ						
Dimensions (W*H*D) (mm)	660*420*360	660*575*360	660*730*360	660*885*360	660*1040*360	660*1195*360	660*1350*360
Tolerance (W*H*D) (mm)	±3/±6/±3	±3/±9/±3	±3/±12/±3	±3/±15/±3	±3/±18/±3	±3/±21/±3	±3/±24/±3
Weight (kg)	105.5±5%	156.0±5%	206.5±5%	257±5%	307.5±5%	358±5%	408.5±5%
Communication interfaces	CAN						
*¹ warm up function off *² warm up function on							

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Specifications for CQ7-80 (w)						
Model No.	CQ7-80-L9 (w)	CQ7-80-L10 (w)	CQ7-80-L11 (w)	CQ7-80-L12 (w)	CQ7-80-L13 (w)	CQ7-80-L14 (w)
Technical Properties						
Battery designation	IFpP53/150/120[(18S)9S]M/-10+50/90	IFpP53/150/120[(18S)10S]M/-10+50/90	IFpP53/150/120[(18S)11S]M/-10+50/90	IFpP53/150/120[(18S)12S]M/-10+50/90	IFpP53/150/120[(18S)13S]M/-10+50/90	IFpP53/150/120[(18S)14S]M/-10+50/90
The number of batteries	1CQ7-M-80 (w) +8CQ7-S-80 (w)	1CQ7-M-80 (w) +9CQ7-S-80 (w)	1CQ7-M-80 (w) +10CQ7-S-80 (w)	1CQ7-M-80 (w) +11CQ7-S-80 (w)	1CQ7-M-80 (w) +12CQ7-S-80 (w)	1CQ7-M-80 (w) +13CQ7-S-80 (w)
Nominal voltage (V)	518.4	576.0	633.6	691.2	748.8	806.4
Rated capacity (Ah)	122	122	122	122	122	122
Nominal energy (kWh)	63.18	70.20	77.22	84.24	91.26	98.28
Battery voltage range (V)	469.8~591.3	522.0~657.0	574.2~722.7	626.4~788.4	678.6~854.1	730.8~919.8
Max. charge/discharge current (A)	80/80					
(CC-CV) Standard charging current (A)	50					
Constant current and constant voltage charging cut-off current (A)	2					
Peak discharge Current (60s) (A)	120					
Depth of discharge(%)	90					
Storage temperature (℃)	-10~50					
Operating charge/discharge temperature (℃)	0~55/-10~55*1 -25~55/-25~55*2					
Discharge capacity (Ah)	97.6@-20±2℃ @1/3C ; 122@25±2℃ @1/3C; 122@55±2℃ @1/3C					
Cycle life	≥6000 @25℃ @ 70%SOH					
Ingress protection	IP65					
Protective class	Class I					

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Dimensions (W*H*D)(mm)	660*1505*360	660*1660*360	660*1815*360	660*1970*360	660*2125*360	660*2280*360
Tolerance (W*H*D) (mm)	±3/±27/±3	±3/±30/±3	±3/±33/±3	±3/±36/±3	±3/±39/±3	±3/±42/±3
Weight (kg)	459±5%	509.5±5%	560±5%	610.5±5%	661±5%	711.5±5%
Communication interfaces	CAN					
*1 warm up function off *2 warm up function on						

Note!

The battery designation is a series of numbers that represent the battery's positive and negative electrode types, structure and size, charge and discharge rate, and operating temperature range.

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9 Contact Us

If you have any questions about the product, please contact us:

- Fox ESS Headquarters: No.939, Jinhai Third Road, New Airport Industry Area, Longwan District, Wenzhou, Zhejiang, China.
- Wuxi R&D Center: No. 37 Huaqing Avenue, Wuxi Economic Development Zone (Intersection of Huaqing Avenue and Huayun Road)
- Wuhan R&D Center: 6th Floor, Block A, Tower T4, CHINA PROCUREMENT CENTER, No. 789 Gaoxin Avenue, East Lake New Technology Development Zone, Wuhan City, Hubei Province, P.R. China
- Shanghai R&D Center: No.1255, Jinhai Road, Pudong New Area, Shanghai, China
- After-Sales Service Hotline: 400 1888 900
- Contact Telephone (Wenzhou): 0577-88159999
- Contact Telephone (Wuxi): 0510-68092998
- Contact Us: info@fox-ess.com
- Contact Us (EV Charger): ev@fox-ess.com
- After-Sales Service: service@fox-ess.com

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