User Manual

Fast DC Charger

MS-ACC60/80/120/160-2



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Preface

This manual provides information on safety, installation, electrical connection, operation, maintenance, and other relevant aspects of the product.

In this manual, the terms “equipment”, “device”, and “product” refer to the product or its components; the terms “manufacturer”, “producer”, and “the Company” refer to NINGBO DEYE ESS TECHNOLOGY CO., LTD. or its authorized agents.

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CE

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1 Safety

1.1 Symbols

Symbol	Description
	Warning; Electricity
	General Warning
	Warning; Hot surface
	Separate collection for waste electrical and electronic equipment is required
	Refer to instruction manual
	Operator's manual
	CE mark of conformity
	Connect an earth terminal to the ground
	Do not touch hot surfaces
	This way up
	Fragile
	Keep away from rain
	Do not roll
	Do not stack
	Center of gravity
	Insert the forklift forks at the position indicated

1.2 Safety Precautions

This manual uses the following signal words to indicate imminently or potentially hazardous situations. Observe all safety instructions to avoid personal injury, property damage, or equipment malfunction.

Symbols	Description
DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTE	Indicates supplementary explanation, clarification, or emphasis on a particular content for better understanding.

1.2.1 Personal safety

DANGER

- Keep the equipment out of reach of children and animals.
- Only personnel authorized by the company are permitted to repair or disassemble the system. Unauthorized operations may cause fatal electric shock.

WARNING

- Wiring and electrical connections must be performed by personnel with knowledge of electronics, electrical wiring, and mechanics, and who are familiar with the electrical and mechanical schematics of this equipment.

CAUTION

- Personnel planning to install, operate, or maintain this equipment must:
  - Read, understand and strictly comply with all safety instructions specified in this manual and relevant document.
  - Follow applicable local standards and regulations.
  - Be qualified professionals or trained personnel (as defined in the NOTE below).
- Avoid direct contact with equipment components to prevent scalding caused by high temperatures generated during malfunction.
- Components may become extremely hot in case of malfunction; touching is prohibited to prevent scalding.
- Keep away from hot components (e.g., the air outlet) during charging to avoid burns.

NOTE

- Qualified professionals: Personnel familiar with the working principles and structure of the equipment, who have received training or have operation experience, and are fully aware of the sources and risk levels of potential hazards during equipment installation, operation and maintenance.
- Trained personnel: Personnel who have completed technical and safety training, have qualified practical operation experience, are aware of potential hazards to themselves and others during specific operations, and are capable of taking protective measures to minimize those hazards.

1.2.2 Electrical Safety

DANGER

- Dangerous lethal high voltage is present inside the unit. Contact with live terminals and internal charged parts will result in fatal electric shock.
- All work related to equipment installation and wiring shall comply with local rules and regulations.
- The adaptors, conversion adaptors, and cord extension sets are not allowed to be used.

WARNING

- Before any installation, maintenance or inspection work, cut off and isolate all external and internal power sources. Confirm the unit is fully de-energized before operation.
- Perform installation or electrical connection only when the equipment is intact and free of damage.
- Residual voltage may remain in the high-voltage circuit even after power is disconnected. Wait for at least 10 minutes and verify zero voltage with a standard professional voltmeter before any operation.
- The equipment must be reliably grounded with a grounding resistance complying with local regulations.
- During all operations, use insulated tools and wear personal protective equipment. Remove all metal accessories such as watches and rings.
- Keep terminals away from exposed wires and metal objects.
- All adjacent exposed live parts must be fully covered and shielded with insulating materials.
- Do not place any tools or metal parts on the equipment.
- Do not perform installation, wiring and maintenance in the event of severe weather.

CAUTION

- Ensure correct wiring. Distinguish positive and negative poles strictly to prevent short circuits with external devices.

1.2.3 Mechanical Safety

DANGER

- Installation or operation of the equipment in explosive or high-humidity areas is strictly prohibited.

WARNING

- Do not insert foreign objects into any part of the equipment.
- To prevent mechanical damage, avoid bending, squeezing, or crushing the charging connector.
- Only start charging when the vehicle is fully stationary, and do not start the vehicle while charging is in progress.
- Do not use the charger if the connector or cable is defective, frayed, cracked, or has exposed wires.
- Do not plug or unplug the charging connector during charging.
- Set up standard warning signs and safety barriers near the equipment to prevent accidents caused by mis-operation or unauthorized access.

CAUTION

- Route all cables in designated positions. Exposed and irregular cable layout is susceptible to mechanical damage.

1.2.4 Maintenance Safety

DANGER

- Disassembling or modifying the equipment is strictly prohibited.

WARNING

- Fully de-energize the equipment before equipment relocation or any maintenance work.
- All terminals and circuit connectors must be disconnected before maintenance.
- Maintenance shall follow the sequence: equipment de-energization, lockout/tagout to prevent re-energization, zero-voltage verification, residual charge discharge and equipment grounding, and insulation shielding of adjacent live parts.

- Failure to observe warnings, improper installation and wiring, or operation by untrained personnel will lead to potential safety hazards.

NOTE

- Do not paint any internal or external components of equipment.
- Do not clean the equipment with cleaning solvents.
- The equipment should be commissioned no later than six months after delivery.

1.2.5 Environmental Safety

 **DANGER**

- Open flames, sparks, and other ignition sources must be kept away from the system at all times.

 **WARNING**

- Do not expose the equipment to flammable substances, corrosive chemicals, or their vapors.
- Do not submerge the equipment in water or expose it to excessive moisture. The ingress protection rating of the equipment is only valid for fully assembled and intact configuration.

NOTE

- Where this manual does not cover a specific scenario, applicable safety regulations and occupational health standards shall prevail.
- You are obliged to handle waste batteries in compliance with applicable regulations, including removing any personal data from associated devices, and to return them to a designated or authorized recovery point. Used batteries must never be disposed of as household waste.

2 Product Description

2.1 Product Overview

The MS-ACC-120-2 AC-coupled DC charger integrates 40 kW AC/DC power modules, two charging connectors and cables, a control system, a high-voltage system, and an environmental monitoring system. It is mainly used to provide fast charging for electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs).

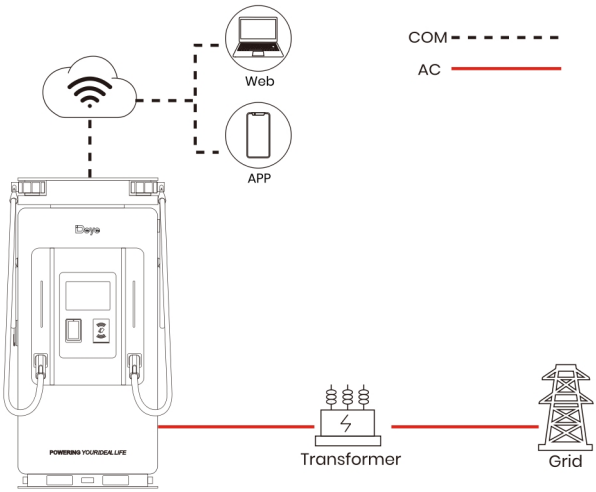
The charger supports AC-side parallel connection of multiple units for power expansion and can also be integrated with energy storage systems for peak shaving and load balancing.

This manual applies to the following models: MS-ACC60-2, MS-ACC80-2, MS-ACC120-2, MS-ACC160-2. For specification differences between models, refer to Chapter 9 Technical Specifications.

2.2 Application Scenarios

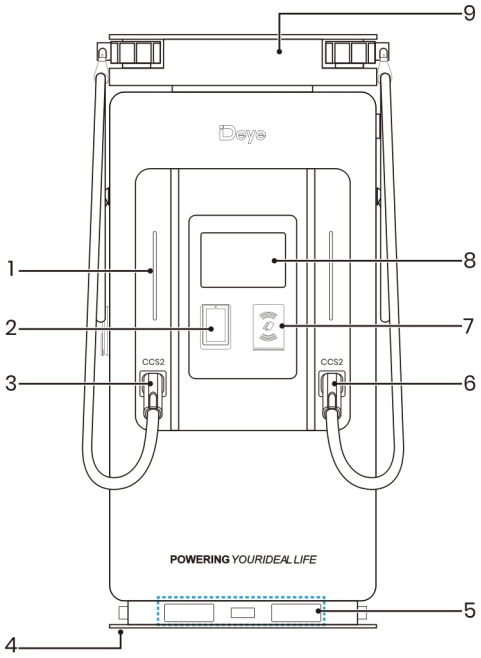
The EV charger, when integrated with a battery storage system and an MPPT cabinet, forms a complete on-grid/off-grid switching system. Please consult with your system integrator for other possible system architectures depending on your requirements.

A grid-tied application scenario integrating PV, battery storage system and EV charger is shown below.



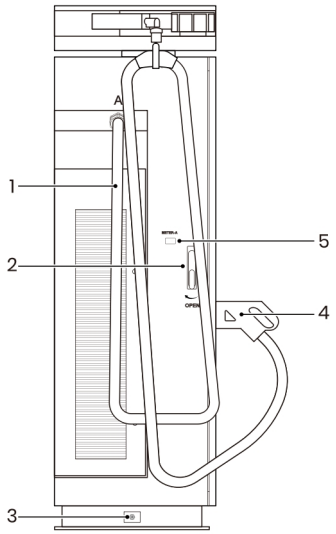
2.3 Product Appearance

Front View

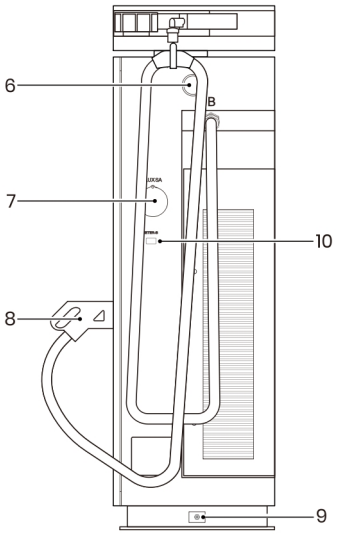


No.	Item	No.	Item
1	Status Indicators ×2	6	Charging Cable & Connector (B)
2	POS Terminal	7	RFID Card Reader
3	Charging Cable & Connector (A)	8	Display Screen
4	Charger Mounting Plate	9	Charging Cable Management System (CCMS)
5	Forklift Pocket ×2	/	/

Left & Right Side Views



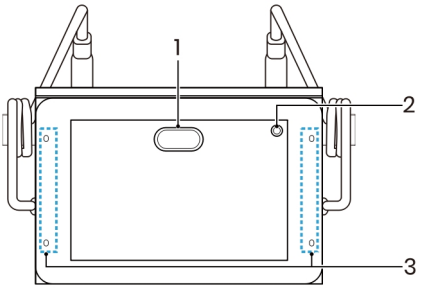
Left



Right

No.	Item	No.	Item
1	Charging Cable (A)	6	Antenna
2	Cabinet Door Lock	7	EPO (Emergency Power-Off) Button
3	Protective Earth Terminal	8	Charging Connector (B)
4	Charging Connector (A)	9	Protective Earth Terminal
5	Meter A Display	10	Meter B Display

Bottom View



No.	Item	No.	Item
1	Rubber Oval Grommet	3	Charger Mounting Hole ×4
2	Stepped Grommet	/	/

2.4 Components

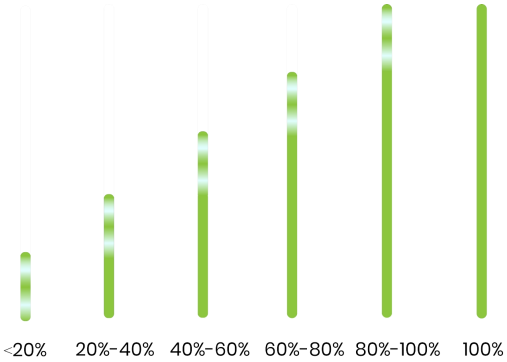
2.4.1 Indicators

The charger is equipped with two status light bars that indicate the equipment status and the SOC of the connected EVs.

Indicator Status	Charger Status
Flashing blue	The charging connector is plugged into the EV.
Flashing green	The charging connector is being used for charging.
Solid green	The connected EV is fully charged.
Solid red	Device unavailable.

SOC of EV

During charging, the status light bars display the real-time SOC of the connected EV. One light bar is divided into 5 segments, each representing 20% of SOC.



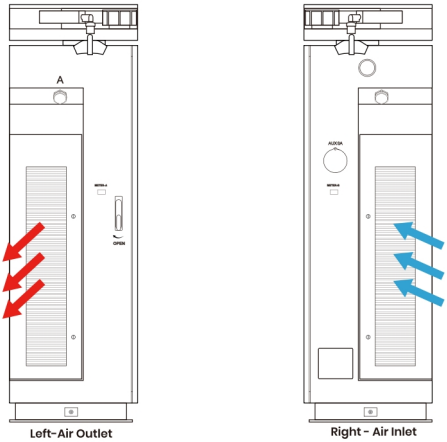
SOC Range	Indicator Status
< 20%	Segment 1 flashes green.
20% ≤ SOC < 40%	Segment 1 remains solid green; Segment 2 flashes green.
40% ≤ SOC < 60%	Segment 1-2 remain solid green; Segment 3 flashes green.
60% ≤ SOC < 80%	Segment 1-3 remain solid green; Segment 4 flashes green.
80% ≤ SOC < 100%	Segment 1-4 remain solid green; Segment 5 flashes green.
100% (EV fully charged)	The entire light bar is solid green.

2.4.2 Air Inlet and Outlet

NOTE

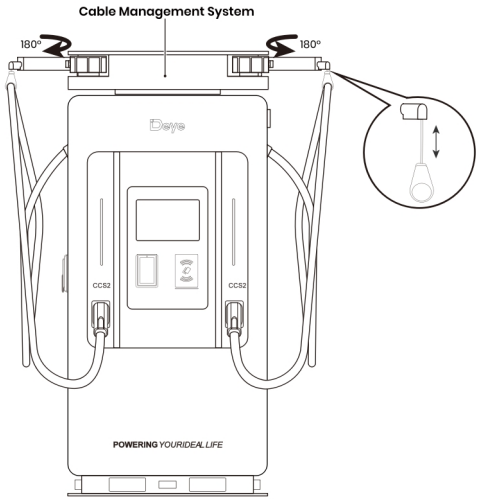
- Do not touch the air outlet or any other hot part of the charger during charging to avoid burns.

To ensure effective heat dissipation, the charger is designed with both an air inlet and an air outlet. The air inlet is equipped with a removable filter pad to filter dust and debris.



2.4.3 Charging Cable Management System

The charging cable management system is mounted on the top of the charger. The support arms on both sides of the system can swing outward approximately 180°, with a retractable cable at the tip of each arm.



3 Transportation

3.1 Safety Precautions

DANGER

- Comply with all applicable safety rules and regulations of the local country or region during loading, unloading, and transportation.
- It is strictly prohibited to mix dangerous goods with food, medicine, animal feed and their additives in the same vehicle or container, and to transport with sharp objects in the same vehicle or container.

WARNING

- Before removing the transport protector, inspect the packaging for damage and check whether the impact indicator on the outer packaging has been triggered; if triggered, potential transport damage cannot be ruled out.
- Keep the equipment upright and securely fixed during sea or land transportation. The inclination angle of equipment shall not exceed 15° throughout the transportation process.
- Throughout the transportation process, protect the equipment from severe vibration, impact, and crushing. Avoid exposure to direct sunlight, rain, and moisture. Take appropriate rainproof, moisture-proof, and sun-protection measures.
- Smoking is strictly prohibited in transportation, loading, and unloading areas.
- Freight personnel are strictly prohibited from opening the outer packaging of the equipment without authorization.
- All loading and unloading operations must be carried out by authorized and trained personnel.

CAUTION

- Lifting operations are allowed only for the Standard version. Handle the equipment with care to avoid impact and collision.
- Transport operators must wear protective gloves and toe-cap safety shoes for personal protection, and pay special attention to avoiding scratches by sharp metal panels and crushing injuries by heavy objects.

NOTE

- Complete compliant and accurate declaration before transportation, and carefully check whether the packaging, labels and markings are intact.

- Do not remove the packaging before arrival at the installation site; remove it after arrival.

3.2 Transportation Methods

Recommended transportation methods: sea freight and land freight.

Requirements for sea and land freight	
Sea freight	▪ Seal all external gaps of the equipment and affix marks certified by the classification society. ▪ Equip the outer packaging with rainproof canvas covers to avoid paint finish scratches.
Land freight	▪ Ensure that transport vehicles are equipped with two tested and certified CO_2 fire extinguishers. ▪ Transport vehicles with twist locks are recommended. If twist locks are unavailable, the product shall be fixed at both the top and bottom with lashing straps to prevent shifting and rollover. ▪ If transportation on sloped roads is necessary, equip the vehicle with additional traction equipment.

3.3 Equipment Handling

DANGER

- Unauthorized personnel must maintain a minimum safe distance of 2 m from the forklift and load during operation. Standing or riding on the forklift or cargo is strictly prohibited.
- Overloading and lifting to excessive heights shall be forbidden to avoid risks of forklift instability and overturning.

WARNING

- Only certified authorized personnel can operate forklifts and perform equipment handling. Unauthorized operation is strictly prohibited. All safety procedures and work instructions must be strictly observed. Any equipment damage or personal injury caused by non-compliant operations shall be the responsibility of the relevant personnel.
- Establish warning signs and a restricted area to prevent unauthorized personnel from entering the handling zone.
- Equipment handling operations are prohibited in severe weather such as typhoons, heavy rain, dense fog and thunderstorms.
- Ensure all equipment doors are closed and secured prior to forklift handling.
- Personnel are prohibited from standing on the suspended load. Loose or movable

items shall not be placed on the load during handling operations.

- Hoisting the charger by crane is prohibited; otherwise, equipment damage may occur.

NOTE

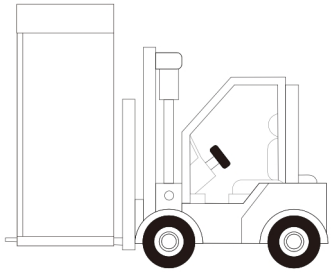
- Refer to the shipping marks or equipment label for exact cabinet weight and dimension parameters.

Forklift Requirements

Item	Requirement
Load capacity	≥ 2 t
Fork length	≥ 1 m
Fork width	80–160 mm
Fork thickness	25–70 mm
Lifting height	≥ 2 m (when foundation height ≤ 0.3 m) Increase accordingly when foundation height > 0.3 m

Fork Positioning & Loading

When lifting heavy or unbalanced loads, observe the center-of-gravity position of the load, and then insert the forks precisely into the reserved forklift pockets located below the "Forklift Fork Insertion" marking on the packaging.



Driving & Steering

- Forklift driving speed shall not exceed 3 miles per hour (3mph). Sharp turns are strictly prohibited to avoid load shifting and imbalance.
- The forklift operator shall fully inspect the rear area and verify safety before reversing. A dedicated spotter shall be arranged for full-time guidance during reversing within confined spaces.
- Operating forklifts on slopes with a gradient ≥5° is strictly prohibited. Slow down and operate carefully when lifting loads on uneven roads.
- Tilting or inverting the cabinet is forbidden throughout the entire handling process. If tilting or inversion is unavoidable under exceptional circumstances, restore the cabinet to an upright position promptly and keep it stationary for 2 hours prior to power-on.

4 Installation

DANGER

- Do not expose the equipment to, or operate it in, flammable or explosive gases, smoke, or any corrosive environment. Otherwise, it may cause fire, explosion or equipment damage.
- There is a risk of static overload during the entire installation process, which may cause damage to building structures. Be sure to verify the site bearing capacity and anti-static measures in advance.

CAUTION

- Only qualified or trained personnel, who have mastered all necessary safety precautions and relevant applicable regulations, are permitted to install the equipment.
- Keep the equipment out of the reach of children and away from daily working or living areas.

WARNING

- The installation and usage environment must comply with relevant international and local laws and regulations. The user is obligated to protect the equipment against fire and other hazards.
- Product assembly must be carried out in strict accordance with the design scheme, process requirements, relevant regulations and national standards; unauthorized changes to assembly procedures and technical parameters are strictly prohibited.

4.1 Pre-Installation Preparation

4.1.1 Site Requirements

The site selection and installation environment of the charger shall at least meet the following requirements. Our company shall not be liable for equipment damage or personal injury caused by non-compliance with the specified installation environmental conditions.

- The charger is strictly prohibited from being installed in areas with explosion hazard or fire hazard.
- Do not install the equipment in low-lying areas prone to water accumulation. The installation elevation of the equipment shall be at least 300 mm above the local historical highest water level; otherwise, flooding risk exists. •

- The equipment shall not be installed in dusty locations, locations with corrosive gases, severe vibration or high temperature. •
- The installation site shall not occupy fire lanes, evacuation passages or fire rescue access areas.
- The air outlets and heat dissipation systems of the equipment's operating components shall not be blocked or covered by foreign objects, to prevent high-temperature damage or fire hazards.
- No combustible vegetation such as weeds and shrubs shall be present within 3 m around the equipment to avoid fire or explosion due to wildfire spread.
- For outdoor installation, the charger shall be located at least 500 m away from the coastline.
- The equipment shall be installed in outdoor areas away from water sources. It shall not be installed beneath areas prone to condensation or water leakage risks. Liquid ingress may cause equipment failure, short circuit, fire or electric shock.
- The installation ground shall be flat and firm with bearing capacity meeting the equipment load requirement. Do not install the equipment above existing underground facilities.
- Ambient temperature, humidity and altitude of the installation environment shall comply with the operating limits specified in the product technical specification.
- It is strictly prohibited to install the equipment in areas prone to fungi, mould and other microorganisms. Microbial corrosion may damage the equipment enclosure and internal components, resulting in equipment failure and personal injury risks during maintenance and inspection.
- Do not install the equipment in corrosive environments such as salt spray corrosion zones and industrial pollution zones. Corrosion may damage equipment parts and bring minor personal injury risks during handling and maintenance.
- To avoid electromagnetic interference, the distance between the equipment and third-party wireless communication facilities shall be greater than 30 m.
- The equipment shall be installed in a well-ventilated environment. Air outlets and heat dissipation channels shall not be blocked or covered to prevent overheating damage or fire.
- The site selection scheme shall meet fire safety control requirements, with complete and reliable supporting fire-fighting facilities.
- The overall layout planning of chargers shall comply with urban-rural planning and ecological and environmental protection regulations. Locations with good traffic accessibility are preferred.
- The equipment should preferably be placed in a sheltered area to reduce direct

sunlight and mitigate adverse effects from harsh weather such as rain, snow and lightning strikes. The site dimensions shall satisfy equipment operation requirements, with sufficient space reserved for maintenance and future expansion.

- A reasonable distance shall preferably be maintained between chargers and residential areas to meet local noise control limits.
- Site selection shall satisfy power supply access conditions. During site planning and construction, it is recommended to reserve flat steel for earthing near the earthing point of the charger to facilitate earthing construction.
- The equipment should preferably be installed in areas covered by public communication networks. The site shall have good 4G signal or an Ethernet port with internet access.

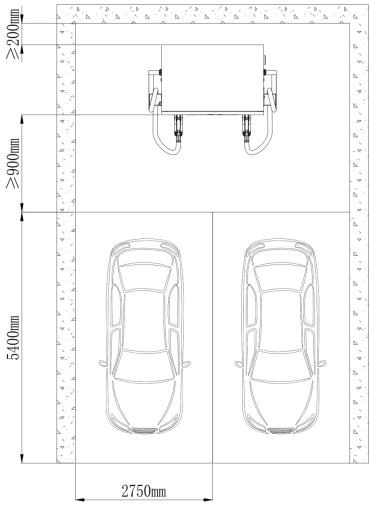
Recommended Clearance

NOTE

- The clearances shown in the figure below are calculated based on the standard single parking space dimensions (2750 × 5400 mm).

The charger shall be installed behind the parking bay, centrally located between two adjacent parking spaces. Reserve sufficient clearance as follows:

- A minimum clearance of **200 mm** shall be reserved at the rear of the charger for swing clearance for side door opening.;
- A minimum clearance of **900 mm** shall be reserved at the front of the charger for charging connector plugging and unplugging.



4.1.2 Foundation Requirements

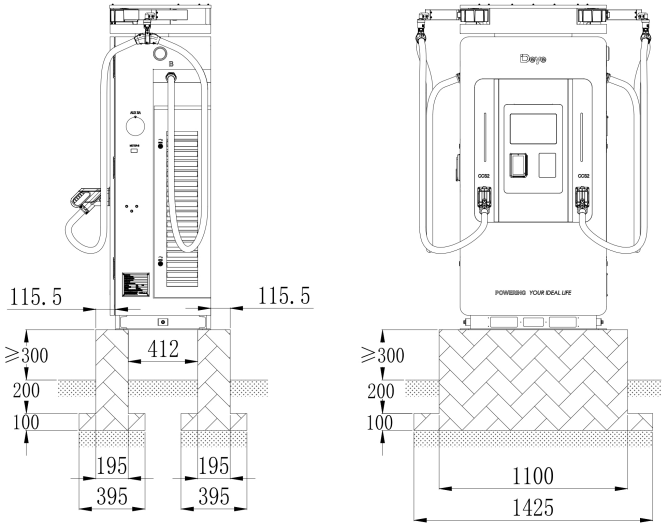
An inadequately designed foundation can cause installation difficulties, compromise equipment operation, and undermine overall system performance. Therefore, the foundation for the energy storage system must be carefully designed and constructed in strict compliance with applicable industry and local standards to ensure proper mechanical support, cable routing, and future maintenance access.

At a minimum, the following requirements shall be met.

General Requirements	
Requirement	**Description**
Surface material	Install cabinets on concrete or other non- combustible surfaces.
Surface condition	The surface must be level, stable, flat, and free of depressions or tilts, with sufficient load- bearing capacity.
Load capacity	The foundation must support the total weight of the equipment. If the bearing capacity is insufficient, re- verification is required.
Floor Edge Extension	115.5 mm beyond the charger base on each side.
Construction & Excavation Requirements	
Requirement	**Description**
Foundation pit bottom	Thoroughly compacted and leveled
Excavation safety	Ensure proper safety measures for excavation support.
Water prevention after excavation	The pit must not be soaked. If water intrusion occurs, further excavation and replacement filling are required.
Surface leveling tolerance	Levelness error between foundation and cabinet contact surface ≤ 3 mm.
Height & Drainage Requirements	
Requirement	**Description**
Height above ground	≥ 300 mm above ground level, higher than local historical highest water level
Drainage system	Drainage facilities should be based on local geology and municipal requirements to prevent water accumulation at the foundation. The system must accommodate the local historical maximum rainfall. Discharged water must comply with local environmental regulations.

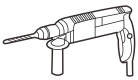
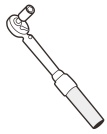
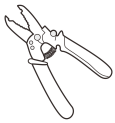
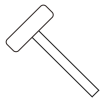
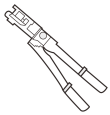
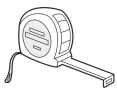
Cable Management & Sealing	
Requirement	**Description**
Cable inlets/ trenches	Reserve cable inlets/trenches as required
Sealing	All reserved cable inlet holes shall be fully sealed post-installation.
Cable Trench Requirements (for bottom cable entry)	
Requirement	**Description**
Dust & Rodent Protection	Prevent foreign objects from entering the equipment.
Waterproof & Moisture Protection	Protect cables from aging and short circuits that could affect normal operation.
Cable cross-section & bending radius	Trench design must accommodate the required cable cross-sectional area and provide sufficient bending radius.

The recommended foundation construction details are provided below and may be adjusted based on actual site conditions.



4.1.3 Tool Requirements

Recommended installation tools and personal protective equipment are listed below and the pictures are for reference only.

Tools			
			
Hammer drill	Phillips insulated torque screwdriver	Flat-head insulated torque screwdriver	Insulated torque socket wrench
			
Diagonal pliers	Wire stripper	Cable cutter	Rubber mallet
			
Ferrule crimping pliers	Hydraulic pliers	Needle-nose pliers	Marker
			
Utility knife	Steel tape measure	Spirit Level	Multimeter
			
Heat shrink tubing	Heat gun	Cable tie	Insulated ladder
			
Forklift	Crane		

Personal Protective Equipment			
			
Insulated gloves	Protective gloves	Goggles	Dust mask
			
Insulated shoes	Safety helmet	Protective suit	

4.2 Unpacking

WARNING

- If the installation environment is not conducive to equipment protection, take measures to prevent internal failure caused by condensation or dust corrosion (e.g., cover with woven cloth or dust cover).
- During component handling and storage, collision and scratch are strictly prohibited. Keep parts dry and rust-free to avoid damage and part failure.

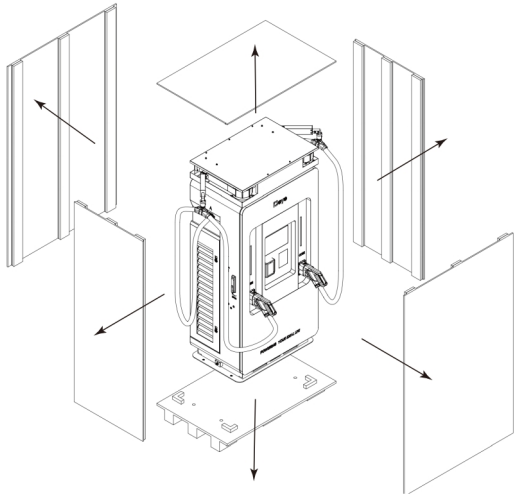
CAUTION

- If possible, do not remove the transport packaging until the equipment arrives at the installation site.
- After preparing the equipment for installation, unpack it carefully to avoid scratching the equipment.
- Keep the equipment stable during unpacking.

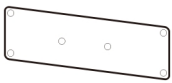
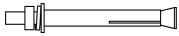
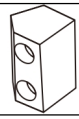
NOTE

- Keep the packaging material for future transportation or long-term storage.
- All components must be thoroughly cleaned before assembly to remove burrs, flash edges, oxide layers, rust, sand particles, dust and stains, ensuring a clean and impurity-free surface.

Unpack and inspect the equipment immediately upon receipt. If the unit is damaged or missing accessories are found, contact the local distributor or the after-sales service department.



4.2.1 Packing List

Standard Accessories		
		
Forklift Pocket Cover ×2 pcs	M10×30 Phillips Pan Head Screw and Washer Assembly ×4 pcs	M4×10 Phillips Pan Head Screw and Washer Assembly ×12 pcs
		
Fire-poof Mud ×1 bag (2.5 kg)	M12×150 Expansion Bolt ×4 pcs	Stopper Block ×2 pcs
		-
M3×20 Cross Recessed Screw ×4 pcs	Charging Card ×1 pc	-

4.2.2 Recommended Torque

Nominal thread diameter (mm)	Thread Pitch	T (N·m)		
		Class 4.8	Class 5.8	Class 8.8
M3	0.5	0.5 ~ 0.7	0.7 ~ 0.9	1.1 ~ 1.5
M4	0.7	1.2 ~ 1.7	1.6 ~ 2.2	2.2 ~ 3.5
M5	0.8	2.5 ~ 3.5	3.2 ~ 4.4	4.5 ~ 6.7
M6	1	4.4 ~ 6.6	5.3 ~ 7.4	7.4 ~ 11.2
M8	1.25	10.3 ~ 14.4	12 ~ 18	16 ~ 26
	1	11.0 ~ 15.4	14 ~ 19	17 ~ 28
M10	1.5	20 ~ 28	25 ~ 35	36 ~ 52
	1.25	21 ~ 30	26 ~ 38	38 ~ 55
M12	1.75	35 ~ 50	44 ~ 62	61 ~ 94
	1.25	37 ~ 52	46 ~ 65	68 ~ 102
M14	2	56 ~ 80	54 ~ 94	97 ~ 150
	1.5	61 ~ 86	75 ~ 108	120 ~ 185
M16	2	88 ~ 124	110 ~ 155	170 ~ 230
	1.5	94 ~ 132	120 ~ 165	190 ~ 250
M18	2.5	120 ~ 170	150 ~ 210	245 ~ 340
	1.5	137 ~ 192	170 ~ 240	270 ~ 370
M20	2.5	172 ~ 242	216 ~ 302	350 ~ 490
	1.5	190 ~270	240 ~ 335	370 ~ 510

NOTE

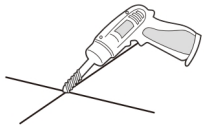
- The torque value is for reference only for standard bolts during normal assembly; adjust appropriately for special working conditions (high vibration/harsh environment).
- If the actual installation conditions (e.g., contact surface conditions, support surface dimensions or shapes) differ significantly from the standard conditions, making the recommended tightening torque insufficient to achieve the required preload, or if specific preload requirements apply, adjust the tightening torque accordingly.
- Use a calibrated torque wrench for installation to ensure torque accuracy.

4.3 Mount the Charger

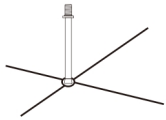
NOTE

- Before securing the charger, make sure the installation site and foundation meet the requirements in this manual and comply with local rules and regulations.

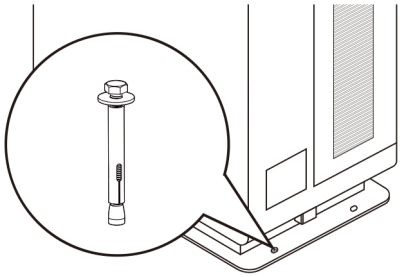
1. Position the charger at the installation site.
2. Mark hole positions on the ground with a marker using the charger base as a template.
3. Remove the charger using a forklift. Then, drill holes (102–105 mm deep) using a hammer drill.



4. Insert the 4 pieces of M12×150 expansion bolts (without nuts and washers) into the drilled holes and tap the expansion sleeves until they are fully seated.



5. Lift the charger and make the 4 holes on the charger base align with the expansion bolts on the ground.
6. Install washers and nuts to the expansion bolt studs. Then, tighten the 4 M12 nuts to secure the charger on the ground (Recommended torque: 60 N·m).



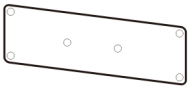
Additionally, the cabinet can be full-welded to foundation pre-embedded channel steel. The welding procedure shall be confirmed with professional installers beforehand, and anti-corrosion treatment is required upon completion.

4.4 Install Forklift Pocket Covers

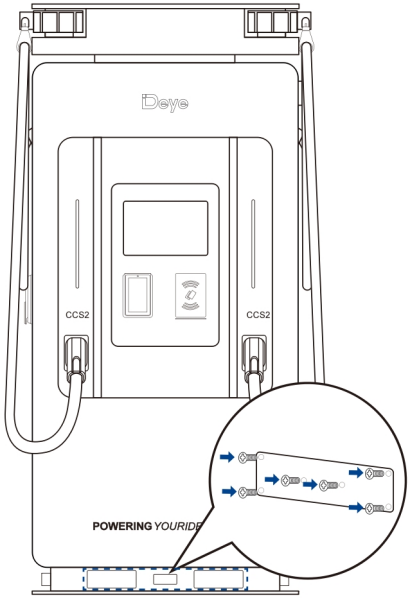
WARNING

- Do not install the forklift pocket covers until the charger is fully secured in its final location and the installation site has been verified to meet all requirements in this manual and all applicable local safety codes and regulations.

1. Take the forklift pocket covers and M4×10 screws from the accessory kit

	
Forklift Pocket Cover ×2 pcs	M4×10 Phillips Pan Head Screw and Washer Assembly ×12 pcs

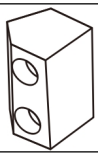
2. Attach the 2 forklift pocket covers to the forklift pockets at the bottom edge of the charger. Then secure them using 12 M4×10 screws (6 per cover).



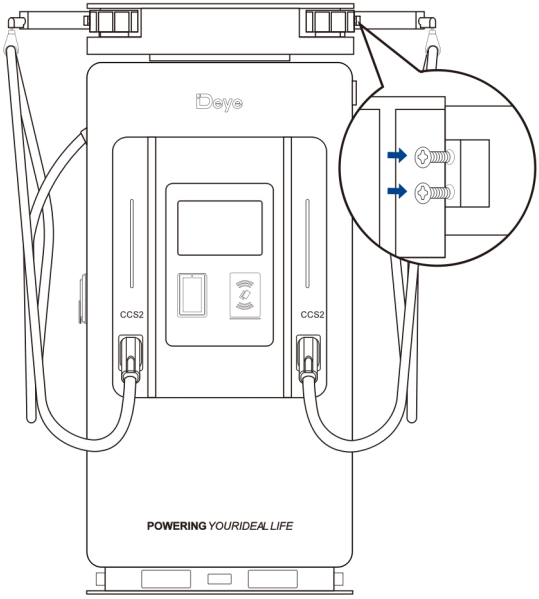
4.5 Install Stopper Blocks

Stopper blocks must be installed to prevent over-travel impact on system components and protects the equipment.

1. Take the stopper blocks and M3×20 screws from the accessory kit.

	
Stopper Block ×2 pcs	M3×20 Cross Recessed Screw ×4 pcs

2. Swing out the support arm and locate the screw holes for stopper blocks.
3. Align the stopper blocks with the mounting holes and secure them using 4 M3×20 screws.



5 Electrical Connection

5.1 Safety Precautions

DANGER

- All electrical connections must be performed only when the equipment is completely de-energized and isolated from all power sources.
- Do not expose the equipment to flammable or explosive gases, smoke, or any explosive environments.
- Always wear appropriate PPE and use only dedicated insulated tools when working on energized circuits to prevent electric shock, personal injury, or equipment damage.

WARNING

- Only qualified electrical professionals can perform the electrical connection.
- The product can only be used in situations equipped with overvoltage protection devices.
- Do not perform electrical connections in the event of severe weather.
- Do not contact live parts directly without protection.
- Before cable connection, ensure that there is no voltage on the AC side and DC side.
- Ensure correct polarity during wiring: connect positive (+) to positive (+) and negative (-) to negative (-).
- Before connecting cables, check that the polarity of all input cables is correct. Do not pull wires and cables forcibly during electrical installation; otherwise, the insulation performance may be affected. Ensure all cables have sufficient bending space and take necessary auxiliary measures to reduce cable stress.
- When preparing cables, keep clear of the equipment at all times. Cable debris entering the equipment may cause electrical arcing, which can result in serious personal injury or equipment damage.
- All grounding connections must be completed and verified before connecting any high-voltage circuits.

NOTE

- After cable connection, carefully verify that all connections are correct and secure.
- Equipment damage caused by improper connection is not covered under the product warranty.
- Upon completion of wiring, conduct the dielectric withstand voltage test to ensures

the insulation integrity and confirms that the required creepage and clearance distances are adequate for safe operation.

- After completing the wiring, use the fire-proof mud to seal the cable inlet. Only the holes through which cables have been routed need to be sealed.

5.2 Access the Charger Interior

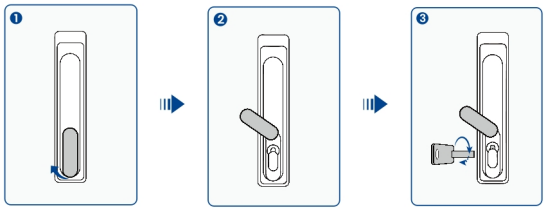
5.2.1 Open the Charger Door

NOTE

- After the electrical connection is complete, lock the door and keep the key.

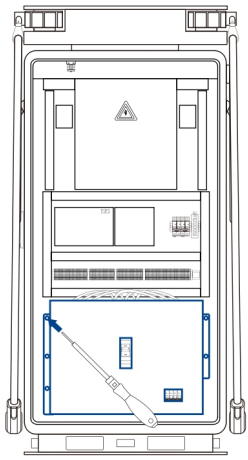
The cabinet door lock is located on the left side of the charger. Before opening the door, unplug the left-side charging connector and place it properly.

1. Slide the protective cover upward to expose the keyhole.
2. Insert the door key into the keyhole and turn it clockwise to release the handle.
3. Rotate the door handle in the indicated direction to unlock and open the door.



5.2.2 Remove the Protective Baffle

Prior to wiring, remove the protective baffle of the power distribution area. Unscrew the fixing screws with a screwdriver and detach the baffle.



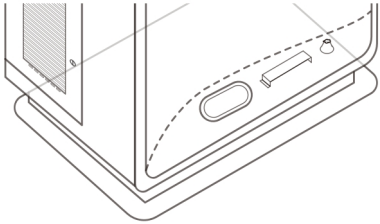
5.2.3 Prepare the Cable Inlet

NOTE

- Select the appropriate cable inlet according to your cable routing plan to ensure neat cable management.

To route the cables through the bottom of the charger, prepare the cable inlet as follows.

1. Open the cabinet door and locate the oval or stepped rubber grommet.



2. Cut a slit in the grommet or pagoda-type cable entry using a utility knife and then clean all debris.



5.3 Cable Preparation

5.3.1 Recommended Cables

Prepare cables in accordance with the table below. The cable cross-section shall comply with local cable standards. All cables are to be supplied by the user.

Usage	Model	Cable Type	Recommended Cable Size	Terminal
Grounding	All models	Grounding flat steel	150-200 mm^2	/
	-	Grounding cable	As per PE conductor specification in GRID section	
GRID	MS-ACC60-2	L1/L2/L3/N conductors	35 mm^2	SC35-10
		PE conductor	16 mm^2	SC16-10
	MS-ACC80-2	L1/L2/L3/N conductors	50 mm^2	SC50-10
		PE conductor	25 mm^2	SC25-10
	MS-ACC120-2	L1/L2/L3/N conductors	95 mm^2	SC95-10
		PE conductor	50 mm^2	SC50-10

	MS-ACC160-2	L1/L2/L3/N conductors	120 mm^2	SC120-10
		PE conductor	70 mm^2	SC70-10
Communication	All models	Cat5e & above FTP cable	25 AWG	RJ45

NOTE

- Choose either the protective earthing terminal at the cabinet bottom or the built-in PE conductor terminal block to ensure reliable earthing of the unit.
- All specifications listed above are recommendations and may be adjusted based on site conditions.
- The recommended Ethernet cable is used for wired network connection or communication with external devices. Prepare the required number of cables according to site requirements.

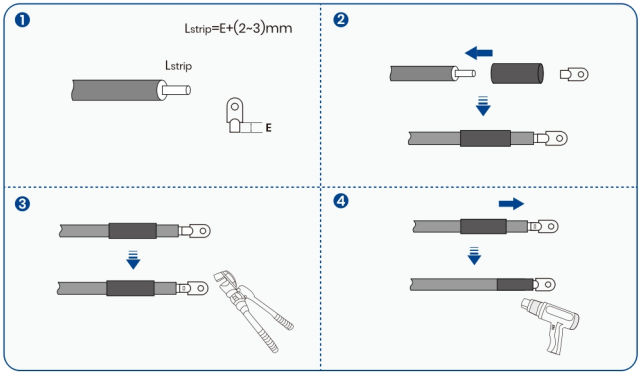
5.3.2 Cable Crimping

NOTE

- Do not damage conductors during wire stripping.
- Wear protection when using a heat gun to avoid damaging the unit.

Crimp OT, DT or SC copper lugs in accordance with the following steps:

1. Strip the cable insulation to a length 2-3 mm longer than the cable lug barrel length.
2. Slide the heat shrink tubing onto the cable, and insert the core wire fully to the bottom of the lug barrel.
3. Crimp the lug firmly with a matching hydraulic crimping tool.
4. Slide the heat-shrink tubing over the lug barrel and heat it with a heat gun until it fits tightly around the joint and provides insulation.



5.4 Equipment Grounding

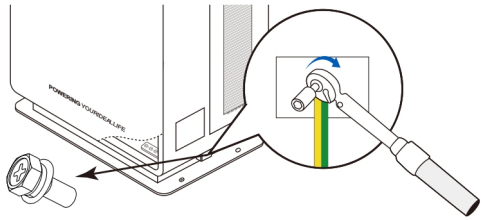
WARNING

- Ensure the equipment is reliably grounded to prevent electric shock.
- After completing earthing connection, measure the earthing resistance and ensure that it complies with applicable national and local standards.
- Grounding cable specifications vary by model; the selected grounding cable shall meet the recommended requirements in 5.3.1 Recommended Cables.

Select one of the following two methods to ensure secure grounding.

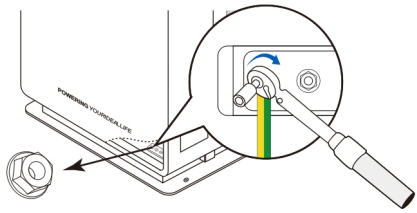
Method 1 Cabinet Frame Grounding

1. Ensure the equipment and external power supply are fully de-energized.
2. Verify all the PE markings at the charger base are intact and legible.
3. Remove the M10 screws at the PE terminals on the charger mounting plate.
4. If a grounding cable is used, crimp the designated lug onto the cable in accordance with 5.3.2 Cable Crimping.
5. Connect the crimped grounding cable or the flat steel to the PE terminal with the M10 screw (Recommended torque: 25 N·m).



Method 2 Internal PE Terminal Grounding

1. Ensure the equipment and external power supply are fully de-energized.
2. Open the charger door and verify the PE markings are intact and legible.
3. Route the grounding cable through the prepared cable inlet.
4. Crimp the designated lug onto the cable in accordance with 5.3.2 Cable Crimping.
5. Remove the hex flange nut from the PE terminal with a socket wrench.
6. Connect the crimped grounding cable to the PE terminal with the hex flange nut.



5.5 Network Connection

The charger supports wireless communication via the built-in 4G router or PCU, and wired communication via Ethernet ports. Select either of the communication methods for network connection.

Prepare corresponding materials for wireless or wired connection before operation.

Method	Installation & Config. Point	Preparation Items
Ethernet Connection	WAN port	Cat5e & above FTP cable, 25 AWG
4G Mobile Communication	Onboard SIM Card Slot	Micro SIM / 3FF 15.00 × 12.00 × 0.76 mm
	4G Router SIM Card Slot	Mini SIM / 2FF 25.00 × 15.00 × 0.76 mm
Wi-Fi Wireless Access	4G Router WLAN Function	WLAN configured in STA mode

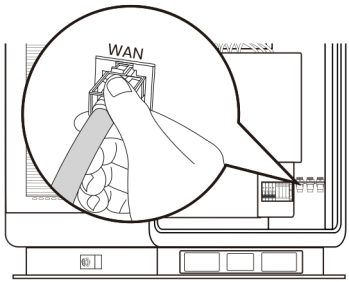
NOTE

- The 4G router is an optional component. If networking via the 4G router is required, confirm that the charger is equipped with this component.

5.5.1 Ethernet Connection

For wired communication, prepared a Cat5e or higher FTP shielded cable as required.

1. Ensure the equipment and external power supply are fully de-energized.
2. Open the charger door and locate the WAN port.
3. Route the Ethernet cable through the prepared cable inlet.
4. Insert the RJ45 terminal of the Ethernet cable into the WAN port on the charger.
5. Gently pull the cable backward to ensure a secure connection after hearing a click.

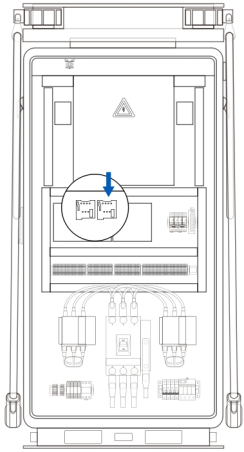


5.5.2 4G Mobile Communications

For 4G networking, a SIM card shall be installed. Insert the SIM card in either the control board or 4G router to establish network communication.

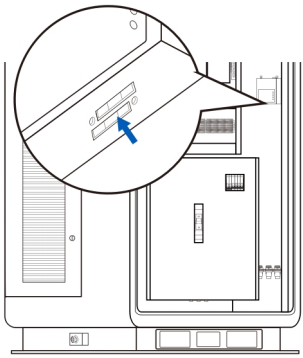
Option 1: Communication via PCU

1. Prepare a Micro SIM card (3FF).
2. Open the charger door and locate the PCU board.
3. Insert the SIM card into the card slot until it clicks into place.



Option 2: Communication via 4G Router

1. Prepare a Mini SIM card (2FF).
2. Open the charger door to locate the 4G router.
3. Press the yellow button beside the card slot to pop out the card tray.
4. Put the SIM card on the card tray and insert the tray into the card slot until it clicks into place.



5.5.3 Wi-Fi Wireless Access

If the charger is equipped with a 4G router, the Wi-Fi access method can be used to connect to the upper-level network:

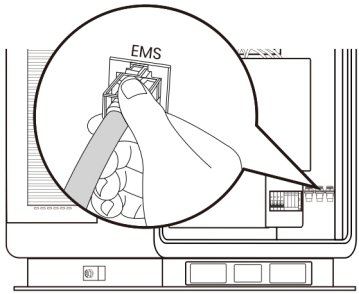
1. Verify that a connectable Wi-Fi network is available on site, and obtain its SSID and password.
2. Log in to the router's Web management page. Contact after-sales personnel to obtain the login URL, username, and password.
3. Set the WLAN interface type to "Client" and select STA mode. Select a connectable Wi-Fi network on site and enter the password to enable normal network communication.

5.6 Communication with External Device

The EV charger reserves a communication interface to support communication with external devices. Contact our solutions engineer for specific application.

Connect the communication cable according to the following steps:

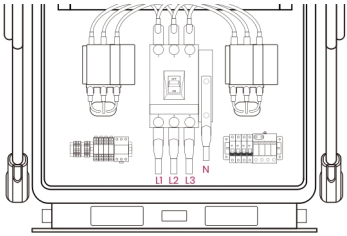
1. Ensure the cabinet and all connected external equipment are fully de-energized.
2. Open the charger door to locate the EMS port.
3. Verify the terminal marking is intact and legible.
4. Route the communication cable through the prepared cable inlet.
5. Connect the RJ45 connector to the designated EMS port as shown below.



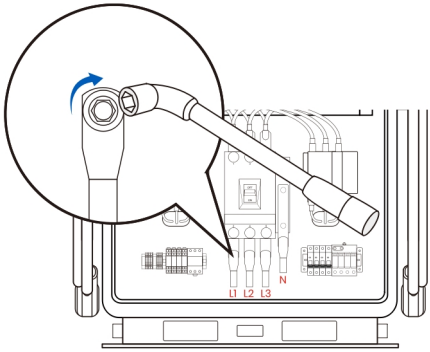
5.7 Connect to the AC Grid

Recommended phase and neutral cable specifications vary by model. Prepare the corresponding cables according to the model purchased. For details, refer to 5.3.1 Recommended Cables.

1. Turn off the mains power supply and ensure the equipment is fully de-energized;
2. Open the charger door to locate the grid terminals and verify all the terminal markings are intact and legible.



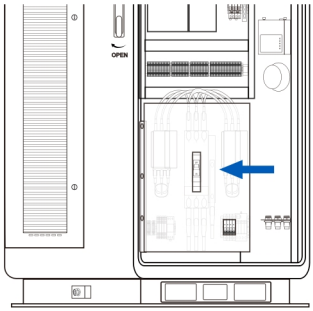
3. Route the AC cables through the prepared cable inlet.
4. Crimp the designated lugs on to the L1/L2/L3/N wires in accordance with 5.3.2 Cable Crimping.
5. Align the crimped L1/L2/L3/N wires to the corresponding terminals and secure them using the supplied M10×30 bolts with a socket wrench.



5.8 Post-Connection Procedures

5.8.1 Reinstall the Protective Baffle

After all wiring has been completed, reinstall the protective baffle in the power distribution area to prevent contact with live components and ensure safe operation.

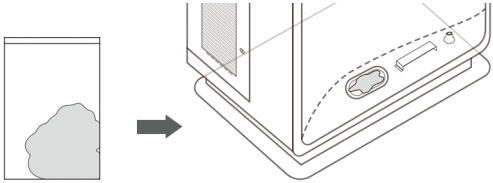


5.8.2 Apply Fire-Proof Mud

CAUTION

- The fire-proof mud must be applied only after all mechanical installation and electrical connection.
- Before applying the fire-proof mud, pull the cables slightly by hand to ensure the cables are securely connected.

After completing the wiring, use the fire-proof mud to seal the bottom cable inlet. Only the holes through which cables are routed need to be sealed.



6 Operation

6.1 Check Before Power-On

No.	Item	Criteria
1	Equipment Appearance	● Equipment is intact, no rust or paint flake-off; Repair damaged paint if any. ● Device labels are clear. Replace damaged labels if any. ● Door lock functions properly
2	Installation	● Installation site and foundation meets design requirements. ● The equipment is level and secured by mounting feet. ● Clearance around the charger meets requirements.
3	Grounding	● The equipment is grounded properly with the grounding flat steel securely connected to the designated PE terminal.
4	Switch/circuit breaker	● All circuit breakers are in the "OFF". ● All disconnectors are in correct position.
5	Cable Connection	● Cables are intact with sheathings wrapped properly. ● Cable specifications meet the requirements and terminals are prepared as required. ● Cables are connected in designated positions. ● Labels at both ends of cables are clear. ● Cables are placed properly and with slack at bending points to avoid stress. ● Cables are routed neatly without twists or crossovers in the charger.
6	Cable Inlet Sealing	● Cable inlets are sealed using cable cover or fire-proof mud.
7	Heat Dissipation	● Fans, air inlet and air outlet are unobstructed.
8	Meter	● Verify the meter is free of cracks, dents and other damage, and that all buttons function properly.

6.2 Power-On

DANGER

- Wear insulated gloves and use insulated tools at all times to prevent electric shock or short circuits.
- Monitor the system during power-on. If any fault is detected, power off the system immediately, rectify the fault, then resume operation.

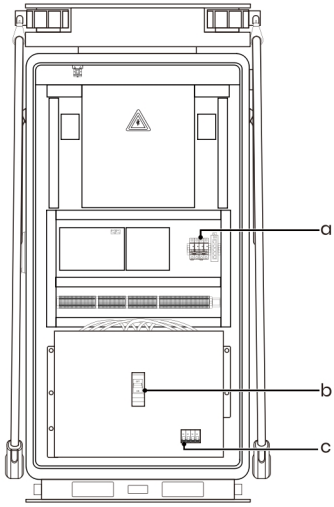
WARNING

- If any circuit breaker inside the equipment strips, inspect the corresponding load side for faults. Only restore the circuit breaker after confirming no short circuit or other abnormality exists, to prevent fault escalation and potential hazards.
- Keep foreign objects, especially metal debris, away from the battery area to avoid short circuit risks.
- Clear the equipment working area, and strictly prohibit unrelated personnel and animals from entering the operation range.

NOTE

- Before power-on and long-term operation, remove all desiccants from the equipment and dispose of them according to local waste disposal regulations.
- Before power-on, check that the equipment is securely grounded and connected to the AC grid.

Power-On Procedures



No.	Item	No.	Item
a	MCB (Miniature Circuit Breaker)	c	SPD backup circuit breaker
b	AC circuit breaker	/	/

4. Close the SPD backup circuit breaker (**c**) to confirm the lightning protection circuit is properly engaged.
5. Close the MCB (**a**) to energize the auxiliary power and fan power circuits.
6. Close the main AC circuit breaker (**b**).

6.3 Charging Procedure

WARNING

- Do not use any extension cable to connect the EV to the charger.
- Do not bend, squeeze, or crush the charging connector, as this may cause mechanical damage.
- Start charging only when your vehicle is completely stationary. Do not start the vehicle during charging.
- Do not use the charger if the charging connector or cable is defective, frayed, cracked, or has exposed wires.
- Do not plug or unplug the charging connector during charging.
- Keep children away from the charger during charging to prevent injury.
- Do not touch any hot part, such as the air outlet, during charging, otherwise, it may cause burns.

NOTE

- Keep the charging connector away from heat, water, or dirt.
- Handle the charging connector with care. Plug and unplug gently to avoid damage to the cable and connector.
- After charging, reinsert the connector into the holder to prevent water or sand ingress.

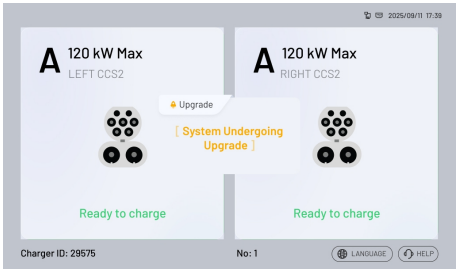
When the charger is powered on for the first time, the LCD displays the main operation interface. You may change the system language by tapping "**Choose Language**".

6.3.1 Select Charging Connector

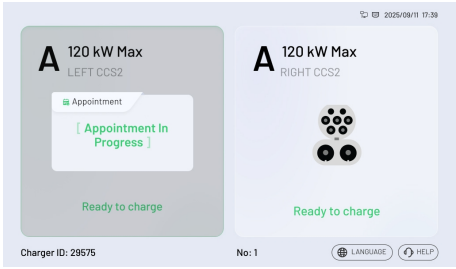
The charger is equipped with 2 charging connectors, which can be used at the same time. Select and plug the charging connectors based on your requirements.

1. Before selecting the charging connector, check the system status and ensure the connector is available. Do **not** plug in the charging connector under any of the following conditions:

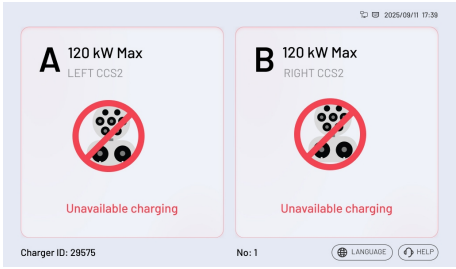
a. System upgrade



b. Reserved charging connector



c. Device Unavailable



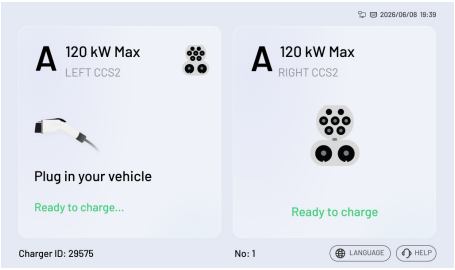
2. Start the charging process via either of the following methods:

- **Screen Selection**

  Tap the touchscreen to select charging connector A or B. Refer to 6.3.2 Select Authentication Method to complete authentication, and insert the corresponding charging connector into the vehicle charging port within the time displayed on the screen to start charging.

- **Direct Plug-in**

  Insert the charging connector into the vehicle charging port. Refer to 6.3.2 Select Authentication Method to complete authentication. Charging will start automatically after successful authentication.



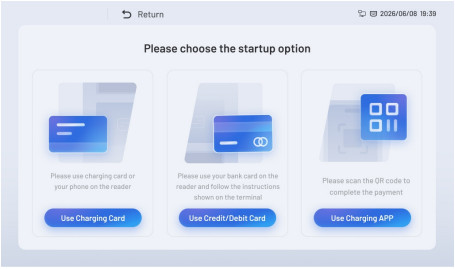
6.3.2 Select Authentication Method

NOTE

- If the authentication method cannot be selected, contact the operation platform for technical support.

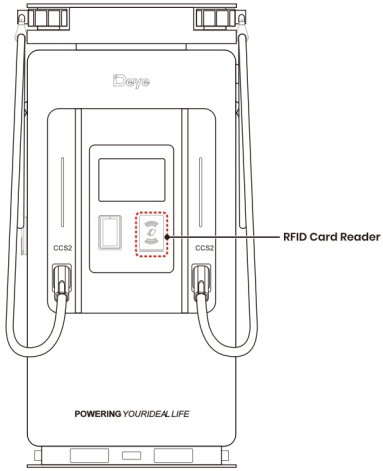
After selecting a charging connector on the touchscreen, or once the system detects that the charging connector is fully inserted into the vehicle charging port, three authentication methods will be displayed on the screen:

- RFID Card
- Credit or Debit Card
- QR Code



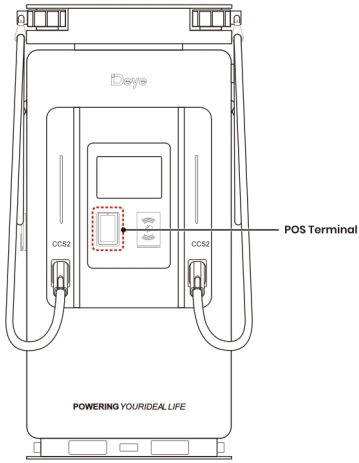
Option 1: Use RFID Card

1. Tap "**Use Charging Card**" on the screen.
2. Tap the included charging card on the card reader area on the front panel of the charger.



Option 2: Use Credit/Debit Card

1. Tap "**Use Credit/Debit Card**" on the screen.
2. Swipe your credit or debit card near the upper area of the POS terminal touchscreen for contactless reading, swipe the card via the card slot on the right side of the terminal, or insert the card into the smart card reader at the bottom of the terminal to complete card reading.

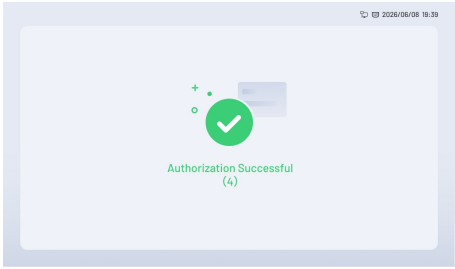


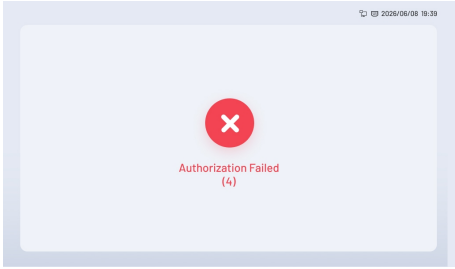
Option 3: Use Charging APP

Tap "**Use Charging APP**" and scan the QR code displayed on the screen by using the third-party platform.



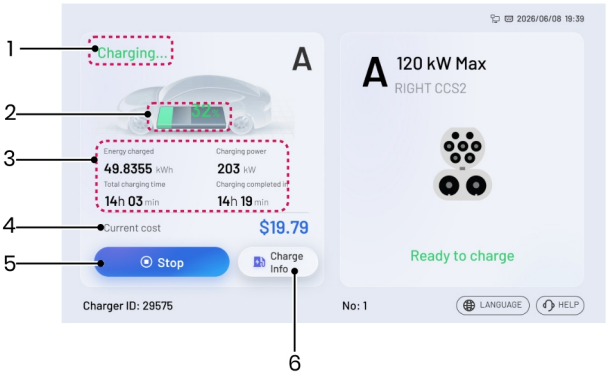
When authentication is successful, the screen displays "**Authentication Successful**"; when authentication fails, it displays "**Authentication Failed**". If authentication fails, the system automatically returns to the authentication method selection screen where you can select another authentication method.





6.3.3 Start a Charging Session

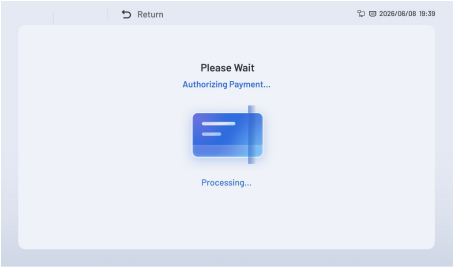
After authentication, the charger starts the charging session. The screen shows the current SOC of the connected EV and other charging details as shown below:



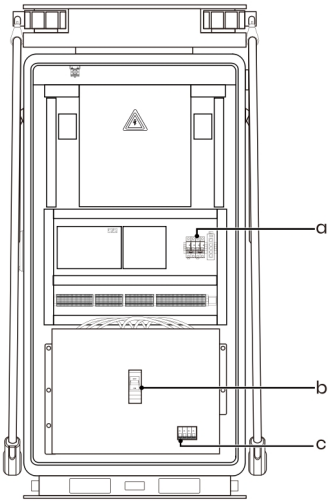
No.	Item	Description
1	Charging Status	Displays current charging status.
2	SOC of connected EV	Displays the state of charge of the connected EV as a percentage.
3	Charging Details	Displays real-time charging parameters including: total energy delivered, charging power, charging time and remaining charging time.
4	Current Cost	Displays the cumulative cost of the current charging session, updated in real time. The current cost displayed is for reference only.
5	Stop Button	Press this button to end the charging session manually.
6	Charging Info	Press this button to access additional details about the charging session, including voltage, current, and charger temperature data.

6.3.4 Stop a Charging Session

When the vehicle is fully charged or the current charging session is terminated, the charger will automatically stop charging and then proceeds to the payment page. Users can also tap the **Stop** button on the screen to terminate the charging session manually. After charging is complete, return the charging connector to its holster.



6.4 Power-Off



No.	Item	No.	Item
a	MCB (Miniature Circuit Breaker)	c	SPD backup circuit breaker
b	AC circuit breaker	/	/

Normal Power-Off

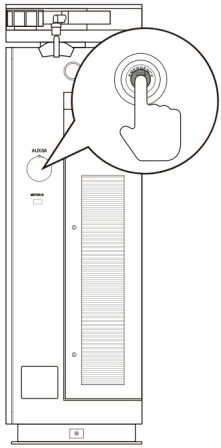
1. Open the MCB (**a**) to de-energize the auxiliary power and fan power circuits.
2. Open the main AC circuit breaker (**b**).
3. Open the SPD backup circuit breaker (**c**).

Emergency Power-Off

WARNING

- Do not press the EPO button during normal system operation or when no emergency condition exists.
- Only after confirming that the fault has been completely cleared can you start the system again.

In an emergency, press the emergency stop button on the right side of the charger to shut down the system.



7 Charge-Web Charging Management System

The Charge-Web Charging Management System is a web-based local monitoring software. It provides one-stop management for the daily operation of EV chargers, including charger cluster monitoring, operation diagnostics, charging management, order inquiry, and data statistics.

The system provides two types of accounts: **Regular User** and **Operation and Maintenance (O&M) User**.

Regular user accounts are limited to device status viewing and charging data monitoring. Advanced operations including station creation, parameter configuration, and system upgrades are restricted to professional O&M personnel.

For detailed instructions and operations of the system, scan the QR code below to access the corresponding user manual.

Additionally, the charger supports remote control and real-time monitoring through the operator's operation platform or App. Please consult your service provider for details.

8 Maintenance

8.1 Safety Precautions

DANGER

- Fully de-energize the equipment before any maintenance work.
- Maintenance shall be performed or supervised by qualified professional personnel.
- Wear personal protective equipment (PPE) and use dedicated insulated tools to avoid electric shocks or short circuits.
- Do not smoke or have open flames in the vicinity of the equipment.
- All terminals and circuit connectors must be disconnected before maintenance.
- Do not wear jewelry, watches or other metallic accessories during maintenance.
- Do not service or maintain the equipment in extreme weather conditions.

WARNING

- Residual voltage may remain in the high-voltage circuit even after power is disconnected. Wait for at least 10 minutes and verify zero voltage with a standard professional voltmeter before any operation.
- Maintenance shall follow the sequence: equipment de-energization, lockout/tagout to prevent re-energization, zero-voltage verification, residual charge discharge and equipment grounding, and insulation shielding of adjacent live parts.
- Install a lockout device on the switch and attach a warning tag to indicate that the switch must not be operated.
- Improper decommissioning may cause damage to equipment. Ensure the product is decommissioned in accordance with relevant provisions before maintenance.
- Do not clean the equipment with water or any solvent.

CAUTION

- Before maintenance, set up warning signs or safety barriers to prevent unauthorized access.
- Use an electroscope of the proper voltage level to verify the equipment is completely de-energized.
- Before maintenance or repair, securely connect the circuit to be serviced to the main grounding system. Remove the grounding connection upon completion.
- Ensure that the air inlets and outlets are not blocked. Remove any debris around the vents to guarantee proper heat dissipation.

- Insert and remove cables in accordance with regulations; violent or forced operations are prohibited.
- Clean tools and materials promptly after maintenance, and check for any metallic objects left inside or on top of the product.
- Contact the customer service center for any operation and maintenance queries; unauthorized operation is prohibited.
- A full inspection and test shall be performed upon completion of maintenance before the equipment is powered on again.

8.2 Maintenance Schedule

The recommended routine maintenance interval for this charger is once every six months. The actual maintenance interval may be adjusted according to the on-site operating conditions of the unit.

Item	Description	Frequency
Environment & Safety	Check that temperature and humidity inside/outside the equipment are within reasonable ranges.	6 months
	Ensure no flammable or explosive materials around the equipment.	6 months
	Check that warning labels are legible and intact.	6 months
	Check if the fire-proof mud is with good adhesion and foundation intact and smooth	6 months
Appearance & Structure	Check that status indicators are in normal condition.	6 months
	Ensure no foreign objects wrap or cover the equipment enclosure.	6 months
	Check the equipment for paint peeling/ rust, door lock damage and blocked vents.	6 months
	Verify normal function of EPO button and equipment shutdown switches.	6 months
	Check the POS terminal and RFID card read area function normally and is free from damage.	6 months
	Verify that there are no foreign objects in the cabinet, check internal screws for loss and rust, and ensure copper busbars are free from stains and corrosion.	6 months

Internal Components	ACDC Module: ensure all wiring is reliable, free from corrosion, looseness or overheating; check the CAN communication circuits; verify that input and output voltage, current, power and other parameters are within the normal operating range; verify protection functions including overload, overvoltage and overtemperature protection work properly.	6 months
	Charging Cables and Connectors: inspect the charging cable for scratches, dents, damaged cable sheathing and other defects; check that the structure of the charging cable base is intact and free of cracks; verify the latching mechanism of the charging connector works properly.	6 months
	Auxiliary Distribution Board: verify that the indicator lights of all components remain lit; check that all connections are tight and free of looseness, corrosion or overheating; clean internal dust to maintain proper heat dissipation.	6 months
	Cooling Fan Assembly: check the fans and speed control function for normal operation; clean the fan surface to maintain proper heat dissipation; ensure all wiring is reliable, free from corrosion and looseness; check the dust filter and replace it promptly.	6 months
Electrical Connections	Check all cables for loose connection, damage and water ingress.	6 months
	Verify that grounding and equipotential bonding are reliable.	6 months

8.3 Post-Maintenance Requirements

After completing maintenance operations, follows the steps below to retore the site and archive the maintenance records:

Step	Operation
1. Cleaning & Restoration	Remove all temporary measures (e.g., grounding and warning signs) and wiring is restored to original condition. Prevent foreign objects from being left behind or personnel from inadvertently entering.
2. Power-up & Verification	Restore system power step by step per the power-up procedure. Verify that the system has no alarms and operating parameters are normal.
3. Recording & Archiving	Create traceable maintenance records, including the time, personnel and equipment status, and archive the records.

8.4 Storage

NOTE

- For long-term storage, keep the original packaging and check it regularly.

WARNING

- Keep the equipment far away from high-temperature heat sources, open flames, flammable and explosive areas, and all ignition sources, and do not expose it to direct sunlight or rain.
- During storage, ensure the equipment is completely disconnected from external equipment, with all operation indicators off.
- Store the equipment in a dry, clean, well-ventilated indoor area on flat, solid ground, away from strong infrared radiation, organic solvents, corrosive gases, and conductive metal dust.
- Handle with care. Dropping, collision, overturning, side placement, or tilting are strictly prohibited. Do not stack or roll the equipment improperly.
- Strictly comply with the storage requirements of the warning signs and other information on the packaging to avoid device damage.
- The storage area must be equipped with qualified fire-fighting facilities, including fire sand and special fire extinguishers.

Storage Requirements

- **Storage Temperature**: -40℃ ~ 70℃
- **Recommended Storage Temperature**: 20℃ ~ 30℃
- **Humidity**: 5% ~ 95% RH, non-condensing
- **Recommended Humidity**: 40% RH, non-condensing
- **Altitude**: ≤2000 m

Long-Term Storage

- Replace desiccants with the same specifications and quantity regularly.
- Check the outer packaging every 3 months, and replace damaged packaging immediately.
- Maintain temperature and humidity per the storage requirements.

9 Technical Specifications

Model	MS-ACC60-2	MS-ACC80-2	MS-ACC120-2	MS-ACC160-2
Power Input				
Input Rating	400Vac±10%, 3-Phase, 50/60 Hz, L1+L2+L3+N+PE			
Power Factor	0.98			
Current THD	≤ 5%			
Efficiency Rectifier	≥ 96.5%			
RCD (Residual Current Detection)	Integrated Type A RCD Function			
Power Output				
Output Interface	CCS ×2			
Output Voltage	150 ~ 1000 Vdc			
Max DC Output Current	150A	200A	200A	250A
Max DC Output Power	60kW	80kW	120kW	160kW
Distribution Strategy	Intelligent Power Distribution			
User Interface & Control				
Display	10.1-inch Touch Screen			
Support Language	Simplified Chinese, English, Other Languages Available Upon Request			
Push Buttons	Emergency Stop Button			
Authentication	RFID card, APP (Remote Start & QR Code), Credit Card, Plug & Charge			
Communication				
Network Interface	4G, Wi-Fi, Ethernet			
Protocol Charge & Backend	OCPP1.6J 0CPP2.0.1 (Upgradeable)			
Environmental				
Operating Temperature	-30℃-55℃(Derating Over 50℃)			
Storage Temperature	-40℃-70℃			
Humidity	5%~95% No Condensation			

Altitude	≤ 2000m（Derating From 2000m）			
Noise	≤ 65dB@1m			
Mechanical				
Ingress Protection	IP55			
Enclosure Protection	IK10			
Cooling	Forced air cooling			
Charging Cable Length	5m / 7m			
Dimensions (W*D*H)	873 × 600 × 1745 (Excluding outer packaging) 873 × 600 × 1934.5 (Including outer packaging)			
Weight	≤ 385	≤ 385	≤ 405	≤ 425
Installation	Ground mounting			
Regulation				
Compliance	IEC61851-1, IEC61851-21-2, IEC61851-23, IEC61851-24, LVD2014/35/EU, RED2014/53/EU			
Certification	CE, CB			

Note: The actual dimensions and weight shall be subject to the delivered product.

Appendix I Troubleshooting

If any fault occurs, perform troubleshooting according to Troubleshooting Manual first. If the fault cannot be resolved after troubleshooting, contact the after-sales personnel for help.

Appendix II Emergency Handling

DANGER

- In the event of natural disasters (earthquake, typhoon, flood, wildfire, etc.): Prioritize personnel safety, cut off power and stop the ESS immediately.
- Do NOT operate damaged equipment without professional inspection and qualified testing after the disaster.
- Keep away from waterlogged or fire-damaged units and contact our service engineers for professional handling.

WARNING

- When the air intake/exhaust system is operating, do NOT face the exhaust vents under any circumstance.
- Refer to the user manual/product manual for product information. Do NOT open the container door if internal safety cannot be guaranteed.

➢ **Fire/Explosion Hazards**

- Do not open the door. Evacuate immediately to at least 50 meters away from the site and call the fire department.
- Wear respiratory protection. Disconnect the upstream power supply only when safe.
- Isolate the accident area only when safe to keep unauthorized personnel away.
- Post-incident maintenance must be performed by professionals or our after-sales engineers.

➢ **Electric Shock**

- Ensure personal safety, then disconnect the power supply immediately to avoid secondary electric shock.
- Use an insulated object to separate the victim from the power source and perform first aid such as cardiopulmonary resuscitation (CPR).
- Call the emergency medical number immediately to obtain professional medical treatment.
- Protect the accident scene for investigation and evidence preservation.
- Contact professionals to conduct a comprehensive inspection of the ESS. The system may only be put back into use after repair or replacement and passing qualified testing.

- **Mechanical Injury**
  - In the event of equipment tipping and dropping, or component detachment, disconnect power and stop ESS operation immediately.
  - In case of personnel injury, administer first aid (hemostasis, bandaging, etc.) and call the emergency medical number immediately.
  - If obvious odor, damage, smoke or fire is detected, evacuate personnel immediately, call the fire department, and allow professionals to handle firefighting and subsequent treatment.
  - If any abnormalities are observed, professionals shall use move the equipment to an open, safe area, let it stand for 1 hour while monitoring temperature, and contact the engineers.
  - Contact professionals to repair or replace damaged components. The system may only be returned to service after passing inspection and testing.
- **Natural Disasters**
  - In the event of natural disasters including earthquake, typhoon, flood, wildfire, etc., disconnect the power supply and stop the equipment operation immediately.
  - If the equipment is submerged or flooded, do not touch the equipment and keep clear of the waterlogged area.
  - Do not use water-soaked equipment under any circumstances. Contact a qualified recycling service for proper disposal and scrapping.
  - Before a wildfire approaches, establish a firebreak around the equipment and prepare adequate fire-fighting equipment such as fire extinguishers, fire sand, fire hoses, etc.
  - After the disaster, contact professionals to fully inspect the support structure, electrical connections, etc. The system may only be reused after repair/replacement and qualified testing.