

STS 375-750kW Static Switch Cabinet User Manual _ EN

GW375K-STS-A-G10

GW750K-STS-A-G10

Copyright Notice

Copyright©GoodWe Technologies Co., Ltd. 2026. All rights reserved.

Without authorization from GoodWe Technologies Co., Ltd., no content of this manual may be reproduced, transmitted, or uploaded to public networks or other third-party platforms in any form.

Trademark Authorization

GOODWE and the other GOODWE trademarks used in this manual are owned by GoodWe Technologies Co., Ltd. All other trademarks or registered trademarks mentioned in this manual are owned by their respective owners.

NOTICE

Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise specified, the document content cannot replace the safety precautions on the product label. All descriptions in the document are for guidance only.

Preface

Overview

This document mainly introduces the product information, installation and wiring, configuration and commissioning, troubleshooting, and maintenance of the Static Transfer Switch cabinet (hereinafter referred to as STS). Before installing and using this product, please read this manual carefully to understand the product safety information and become familiar with the product's functions and features. The document may be updated from time to time. Please obtain the latest version of materials and more product information from the official website: <https://www.goodwe.com>.

Applicable Products

This document applies to the following device models:

Model	Rated Power	Nominal Voltage
GW375K-ST5-A-G10	The Rated Power of the grid side, BACK-UP port, and SMART-PORT port is 375kW@400V/200kW@220V	127/220,220/380, 230/400, 240/415, 3L/N/ PE
GW750K-ST5-A-G10	The Rated Power of the grid side, BACK-UP port, and SMART-PORT port is 750kW@400V/400kW@220V	

Symbol Definitions



Indicates a highly potential hazard that, if not avoided, will result in death or serious injury.

 WARNING

Indicates a moderate potential hazard that, if not avoided, may result in death or serious injury.

 CAUTION

Indicates a low potential hazard that, if not avoided, may result in moderate or minor injury.

NOTICE

Used for emphasis and supplementary information. It may also provide tips or tricks for optimal product use, helping you solve a problem or save time.

Table of Contents

1 Safety Precautions.....	6
1.1 General Safety.....	6
1.2 Personnel Requirements.....	6
1.3 System Safety.....	7
2 Description of Safety Symbols and Certification Marks.....	10
3 Product Introduction.....	13
3.1 Product Introduction.....	13
3.2 Appearance Description.....	15
3.2.1 Appearance and Internal Component Description.....	15
3.2.2 Product Dimensions.....	18
3.2.3 Indicator Light Description.....	19
3.3 Circuit Block Diagram.....	20
3.4 Operating Mode.....	22
3.5 Supported Grid Types.....	23
4 Equipment Inspection and Storage.....	24
4.1 Equipment Inspection.....	24
4.2 Deliverables.....	24
4.3 Equipment Storage.....	25
5 Installation.....	26
5.1 Installation Requirements.....	26
5.2 Tool Requirements.....	29

5.3 Equipment Inspection.....	32
5.4 Handling Requirements.....	32
5.5 Installing the Equipment.....	34
6 Electrical Connection.....	36
6.1 Preparation Before Wiring.....	37
6.2 Connecting the Protection Ground Wire.....	41
6.3 Connecting Power Cables.....	42
6.4 Connecting Communication Cables.....	45
6.5 Operations After Wiring.....	46
7 Equipment Trial Operation.....	48
7.1 Pre-Power-on Inspection.....	48
7.2 Powering on the Equipment.....	48
8 Monitoring the Power Station via SEMS+.....	50
9 Commissioning via SEC3000C.....	51
10 System Maintenance.....	52
10.1 Powering off the Equipment.....	52
10.2 Troubleshooting.....	52
10.3 Periodic Maintenance.....	58
10.4 Equipment Removal.....	59
10.5 Equipment Scrapping.....	60
11 Technical Parameters.....	61
12 Contact Details.....	65

1 Safety Precautions

Always observe the safety precautions contained in this document when operating the equipment.

WARNING

The inverter has been designed and tested in strict compliance with safety regulations. However, as an electrical device, relevant safety instructions must be observed before performing any operation on the equipment. Improper operation may cause serious injury or property damage.

1.1 General Safety

NOTICE

- Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise specified, the document content cannot replace the safety precautions on the product label. All descriptions in the document are for guidance only.
- Before installing the equipment, read this document carefully to understand the product and the precautions.
- All operations on the equipment must be carried out by professional and qualified electrical technicians who are familiar with the relevant standards and safety regulations at the project location.
- When operating the equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When touching electronic components, wear electrostatic gloves, an electrostatic wrist strap, anti-static clothing, etc., to provide Protection for the equipment from electrostatic damage.
- Unauthorized disassembly or modification may cause equipment damage. Such damage is not covered by the warranty.
- Equipment damage or personal injury caused by failure to install, use, or configure the equipment as required by this document or the corresponding user manual is beyond the responsibility of the equipment manufacturer. For more product warranty information, please visit the official website: <https://www.goodwe.com/warrantyrelated.html>.

1.2 Personnel Requirements

NOTICE

To ensure the safety, compliance, and efficiency of the entire process of equipment transportation, installation, wiring, operation, and maintenance, the work must be performed by professional or qualified personnel.

1. Professional or qualified personnel include:
 - Personnel who have mastered the working principles, system structure, and knowledge of risks and hazards of the equipment, and who have received professional operation training or have extensive practical experience.
 - Personnel who have received relevant technical and safety training, have certain operational experience, can recognize the dangers that specific tasks may pose to themselves, and can take protective measures to minimize risks to themselves and others.
 - Qualified electrical technicians who comply with the laws and regulations of the country/region where they are located.
 - Holders of a degree in electrical engineering/an advanced diploma in an electrical discipline or equivalent/professional qualifications in the electrical field, with at least 2/3/4 years of experience in testing and supervision work using electrical equipment safety standards.
2. Personnel involved in special tasks such as electrical work, work at heights, and operation of special equipment must hold valid qualification certificates required by the equipment location.
3. Medium-voltage equipment operation must be performed by a certified high-voltage electrician.
4. Replacement of equipment and components may only be performed by authorized personnel.

1.3 System Safety

DANGER

- Before making electrical connections, disconnect all upstream switches of the equipment to ensure that the equipment is de-energized. Live-line work is strictly

 DANGER

prohibited; otherwise, hazards such as electric shock may occur.

- Equipment supporting connection to PV strings: the PV input terminal has weak surge current withstand capability. It is strictly forbidden to use a DC voltage source to power on directly through the PV port. If power-on from the PV port is required, follow the steps below. If the equipment is damaged due to non-compliant operation, it is considered man-made damage and is not covered by the product warranty.

Warranty scope.

1. First, limit the output current of the DC voltage source to within the Max. Current from Grid range allowed by the PV port.
 2. Then close the DC Switch of the inverter.
 3. Finally, slowly raise the output voltage of the DC source from 0 to the target value at a rate of $\leq 50\text{V/s}$.
- To prevent personal hazards or equipment damage caused by live-line work, a circuit breaker must be added on the voltage input side of the equipment.
 - All operations such as transportation, storage, installation, operation, use, and maintenance shall comply with applicable laws, regulations, standards, and code requirements.
 - The specifications of cables and components used for electrical connections shall comply with local laws, regulations, standards, and code requirements.
 - Please use the cable connectors supplied with the package to connect the equipment cables. If other models of connectors are used, any equipment damage caused thereby shall not be within the responsibility of the equipment manufacturer.
 - Ensure that all cables of the equipment are correctly and securely connected and are not loose. Improper wiring may result in poor contact or equipment damage.
 - The Protection ground wire of the equipment must be connected securely.
 - For the Protection of equipment and its components from damage during transportation, ensure that transport personnel are professionally trained. During transportation, record operation steps and keep the equipment balanced to prevent it from falling.
 - The equipment is heavy. Please assign corresponding personnel according to the equipment Weight to prevent the equipment from exceeding the manual handling weight range and causing injury to personnel.
 - Ensure the equipment is placed stably and not tilted. Equipment tipping may

 DANGER

cause equipment damage and personal injury.

 WARNING

- During equipment installation, avoid subjecting the wiring terminals to load-bearing; otherwise, terminal damage may result.
- If the cable is subjected to excessive tension, poor connection may result. When wiring, leave a certain length of cable before connecting it to the device terminal port.
- Cables of the same type should be bundled together. Cables of different types should be laid out with a separation of at least 30 mm. Mutual twisting or crossing is prohibited.
- Using cables in high-temperature environments may cause aging and damage to the insulation layer. The distance between cables and heat-generating components or the periphery of heat source areas shall be at least 30 mm.

2 Description of Safety Symbols and Certification Marks

DANGER

- After equipment installation, labels and warning signs on the enclosure must be clearly visible. It is forbidden to cover, alter, or damage them.
- The following descriptions of enclosure warning labels are for reference only. Refer to the actual labels used on the equipment.

No.	Symbol	Description
1		Potential hazard exists during equipment operation. Take protective measures when operating the equipment.
2		High voltage hazard. High voltage exists during equipment operation. Before performing any operation on the equipment, ensure that the equipment has been powered off.
3		The equipment surface may have high temperature. Do not touch during operation, otherwise burns may occur.
4		Please use the equipment as intended. In extreme cases, there is a risk of explosion.
5		The battery contains flammable materials. Beware of fire.
6		The equipment contains corrosive electrolyte. Avoid contact with leaked electrolyte or volatile gas.
7		Delayed discharge. After power off, wait 5 minutes for the equipment to fully discharge.

No.	Symbol	Description
8		Keep the equipment away from open flames or ignition sources.
9		Keep the equipment away from areas accessible to children.
10		Please use the equipment as intended. In extreme cases, there is a risk of explosion.
11		The battery contains flammable materials. Beware of fire.
12		Do not lift the equipment after the battery system wiring is completed or while the battery system is in operation.
13		Do not extinguish with water.
14		Read the product manual carefully before operating the equipment.
		
15		Wear personal protective equipment during installation, operation, and maintenance.
16		Do not dispose of the equipment as household waste. Dispose of the equipment in accordance with local laws and regulations, or return it to the manufacturer.
17		Protection ground wire connection point.
18		Recycling symbol. The equipment should be placed in the correct location and recycled in accordance with local environmental regulations.

No.	Symbol	Description
19		CE Certification mark.
20		RCM Certification mark.

3 Product Introduction

3.1 Product Introduction

STS supports the connection of PV inverters, hybrid inverters, Diesel Generators, loads, and the grid, helping the entire system achieve seamless On/Off-grid switching to meet the backup power demand of areas with unstable power supply.

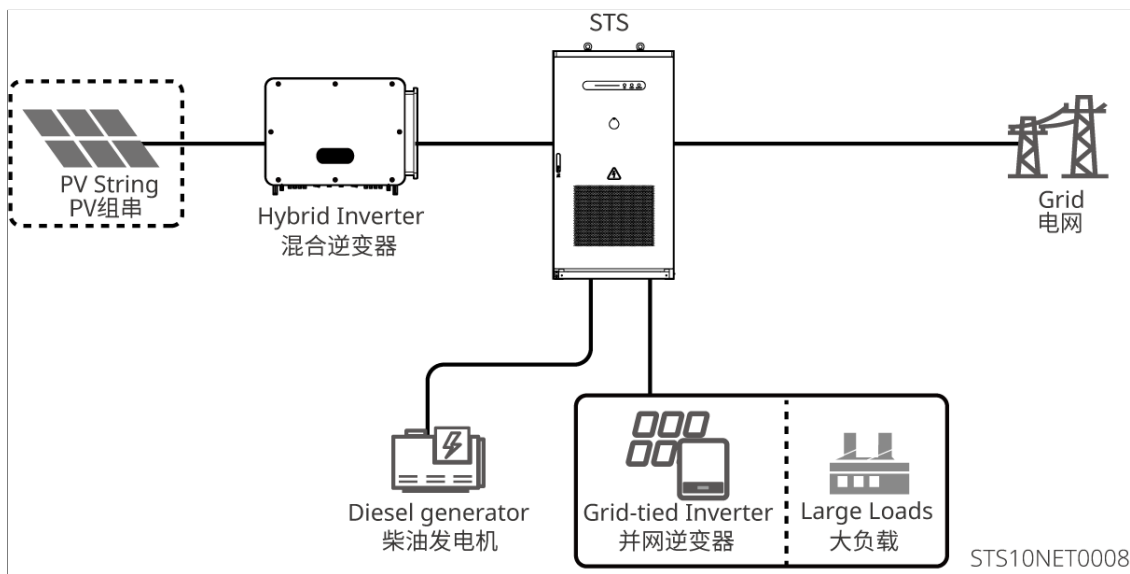


Figure1 Networking Applications

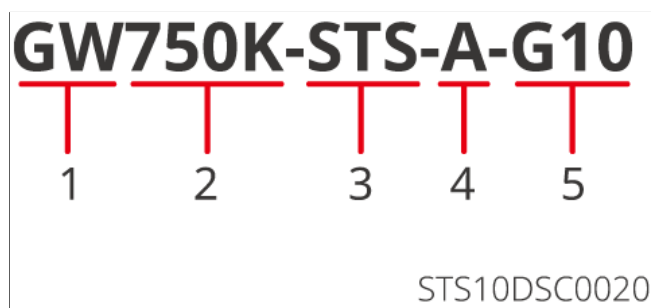
Port	Description
INVERTER	Supports connection to hybrid inverters and AC-coupled inverters • 375K: Supports connection of 3 inverters • 375K: Supports connection of 6 inverters
SMART-PORT	Supports connection to a Diesel Generator or a large load; simultaneous connection is not supported

Port	Description
BACK-UP	- Used to connect grid-connected inverters, loads, UPS, and other devices - When a UPS device is connected, the UPS serves as the backup power source. When the system has no other power supply method, the UPS backup power is enabled. - UPS Specification Requirements: - Rated Power >200VA, Input Voltage Range: 100-240VAC - Backup duration >48h (recommended to be calculated based on SEC3000C power of 30W and a conventional 12V UPS battery)
GRID	Grid Connection

NOTICE

- 375K: Rated Power of the grid side, BACK-UP port, and SMART-PORT port is 375kW@400V/200kW@220V
- 750K: Rated Power of the grid side, BACK-UP port, and SMART-PORT port is 750kW@400V/400kW@220V

Model Meaning

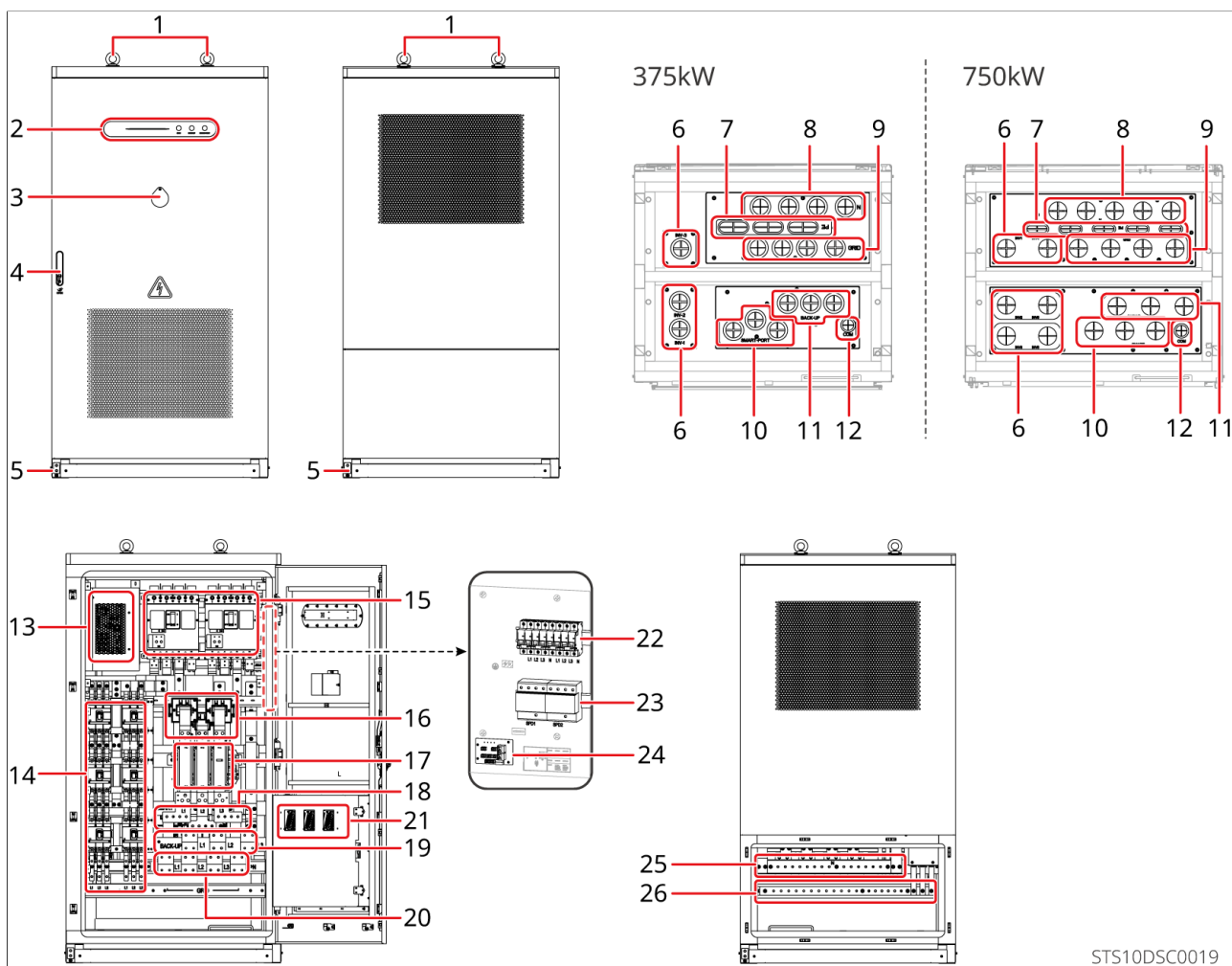


No.	Meaning	Description
1	Brand Code	GW: GoodWe

No.	Meaning	Description
2	Rated Power	375K: Rated Power is 375kW 750K: Rated Power is 750kW
3	Series Name	STS: STS Series
4	Feature Code	A: Feature Code
5	Version Code	G10: First Generation Product

3.2 Appearance & Dimensions

3.2.1 Component Introduction

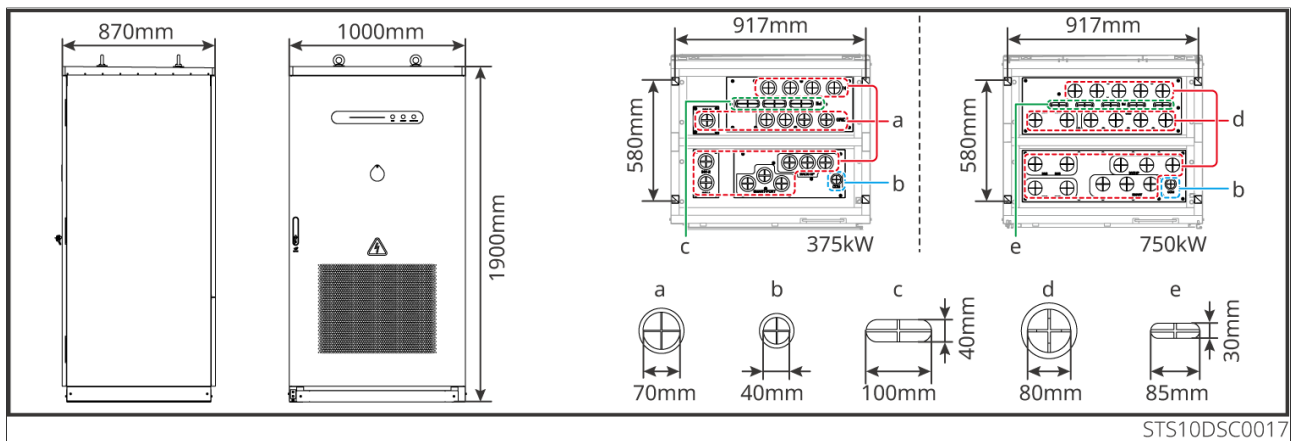


No.	Components	Description
1	Lifting Ring	Used for lifting and handling
2	Indicator Light	Indicates STS operating status
3	EPO Button	In an emergency, press this button to stop the system.
4	Door Lock	Use the key to open the cabinet door lock. When there is no need to operate inside the equipment, close the cabinet door and lock it.
5	Protection Grounding Point	Used to connect the protection ground wire

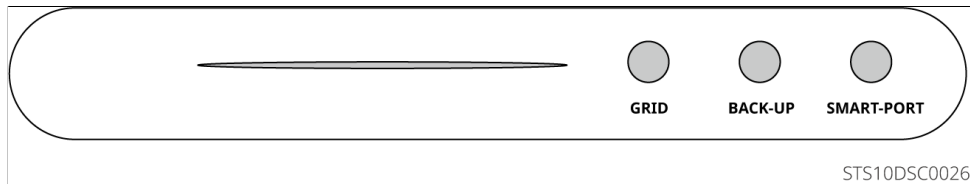
No.	Components	Description
6	Inverter Power Cable Inlet (INV)	Inverter Power Cable Inlet Hole
7	PE Cable Inlet (PE)	PE Cable Inlet Hole
8	N Cable Inlet (N)	N Cable Inlet Hole
9	AC Cable Inlet (GRID)	Cable Inlet Hole for GRID Terminal Wiring
10	AC Cable Inlet (SMART)	Cable Inlet Hole for SMART Terminal Wiring
11	AC Cable Inlet (BACK-UP)	Cable Inlet Hole for BACK-UP Terminal Wiring
12	Communication Cable Inlet (COM)	COM terminal cable entry hole
13	CT	GRID port CT
14	Auxiliary power board	Used to supply power to the control circuit and communication circuit
15	Inverter circuit breaker AC wiring terminal (INVERTER)	- Used to connect AC power lines of hybrid inverters and AC-coupled inverters - Circuit breaker specification: 400VAC 250A 3P
16	Grid port contactor	Control system On/Off-grid Specification: 375K:690V 630A 4P(KM1) 750K:690V 630A*2 4P(KM1、KM2)
17	CT	SMART port CT
18	Smart port contactor	- Control Diesel Generator start/stop 375K:AC/DC 220~240V 760A 3P(KM2) 750K:AC 220~230V(F) 1250A 3P(KM4)

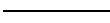
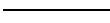
No.	Components	Description
19	AC wiring terminal (SMART)	Used to connect power lines of Diesel Generator or large loads
20	AC wiring terminal (BACK-UP)	- Used to connect power lines of equipment such as grid-tied inverters, loads, UPS, etc. - When a UPS device is connected, the UPS serves as the backup power source. When the system has no other power supply method, the UPS backup power is enabled.
21	AC wiring terminal (GRID)	Used to connect grid AC lines
22	Fan	Temperature regulation
23	Circuit breaker	Disconnect the power supply when replacing the surge arrester module 400VAC 32A 4P
24	Surge arrester	203-10014-00 230/400VAC 385V(L-N)/255V(N-PE) 20kA 40kA 1.8kV(L-N)/1.0kV(N-PE) 203-10010-00 230/400VAC 385V(MOV)/255V(GDT) 20kA 40kA 1.8kV(L-N)/1.6kV(N-PE)
25	Communication line port	Used to connect communication lines for Diesel Generator control, large load control, between STS and inverter, and between STS and SEC
26	N terminal block	Used to connect N wire
27	PE terminal block	Used to connect PE wire

3.2.2 Product Dimensions



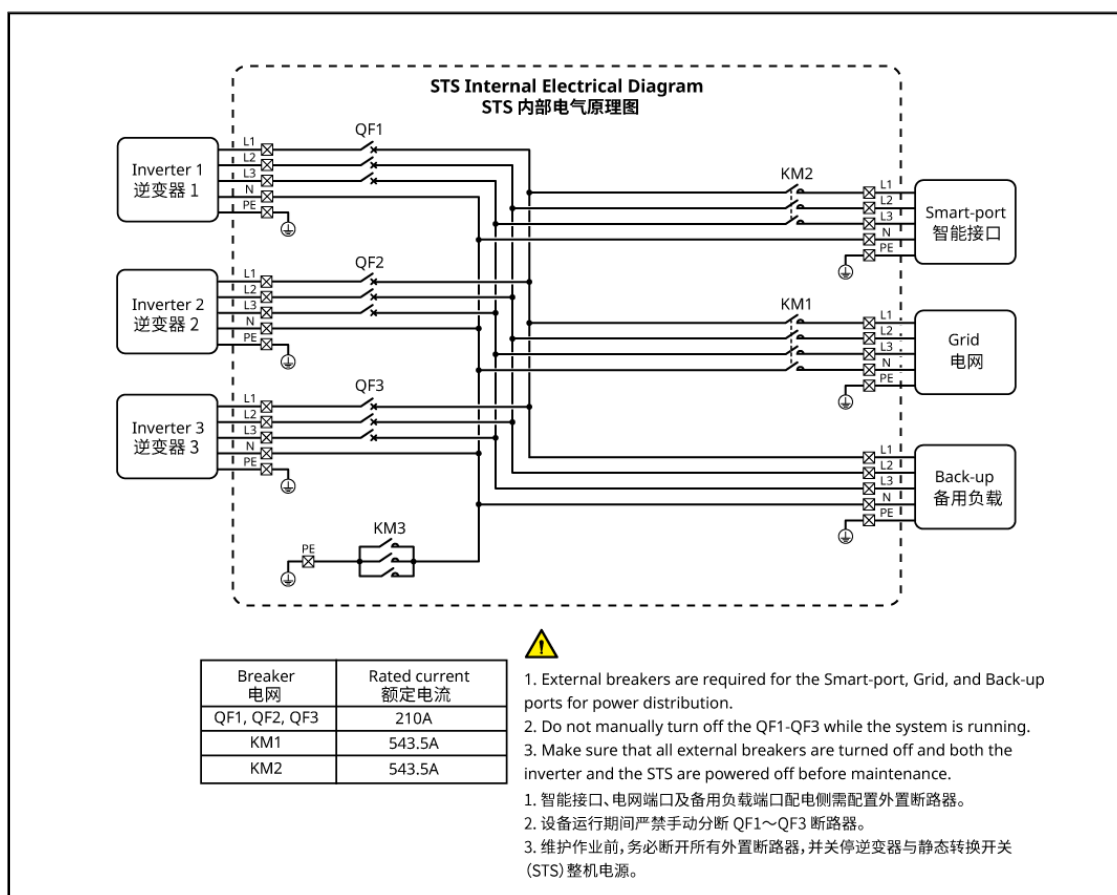
3.2.3 Indicator Light Description



Indicator Light	Status	Description
 GRID		Grid port voltage normal
		Grid port https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf voltage
 BACK-UP		Backup port voltage normal
		Backup port https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf voltage
		SMART-PORT port voltage normal

Indicator Light	Status	Description
 SMART-PORT		SMART-PORT port voltage normal
		Device fault
		Device https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf fault

3.3 Circuit Block Diagram



STS10DSC0021

Figure2 375K

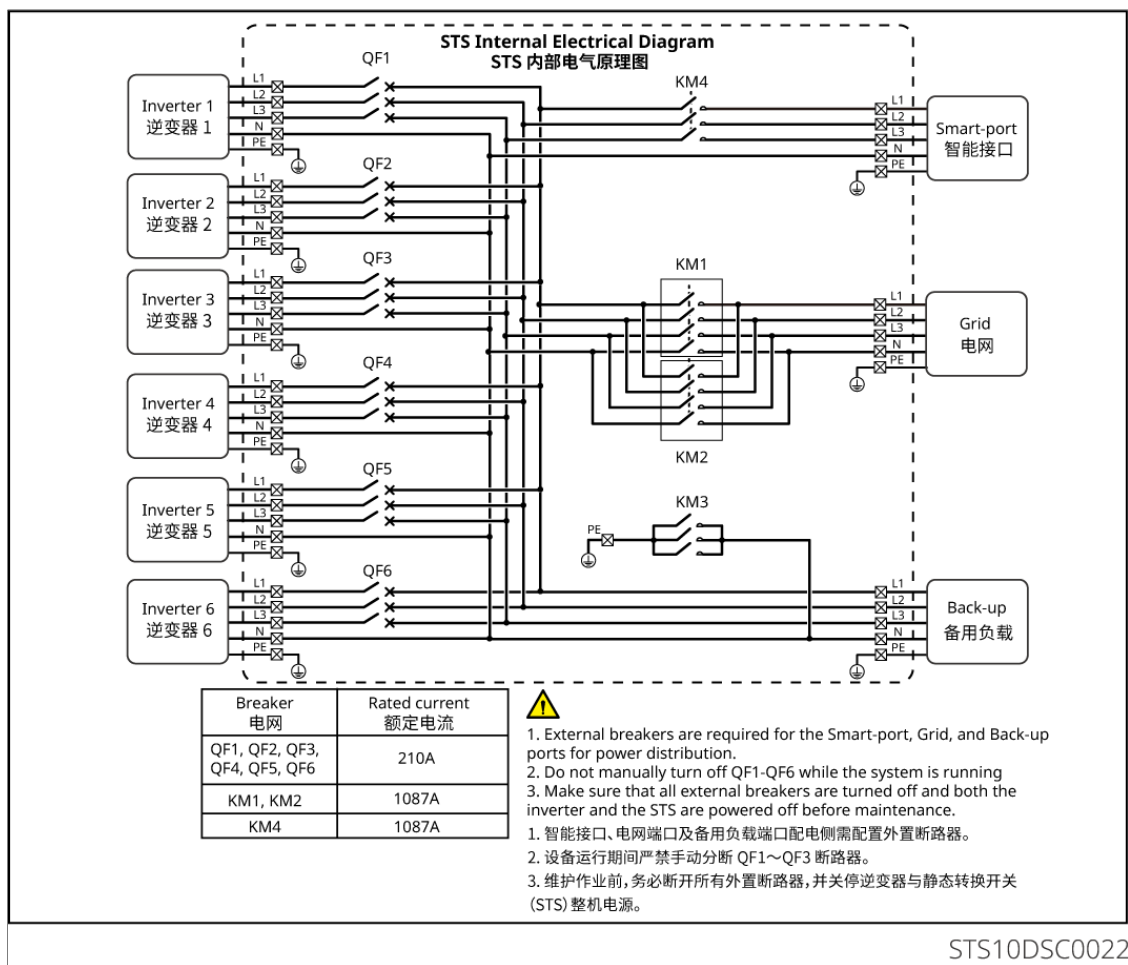
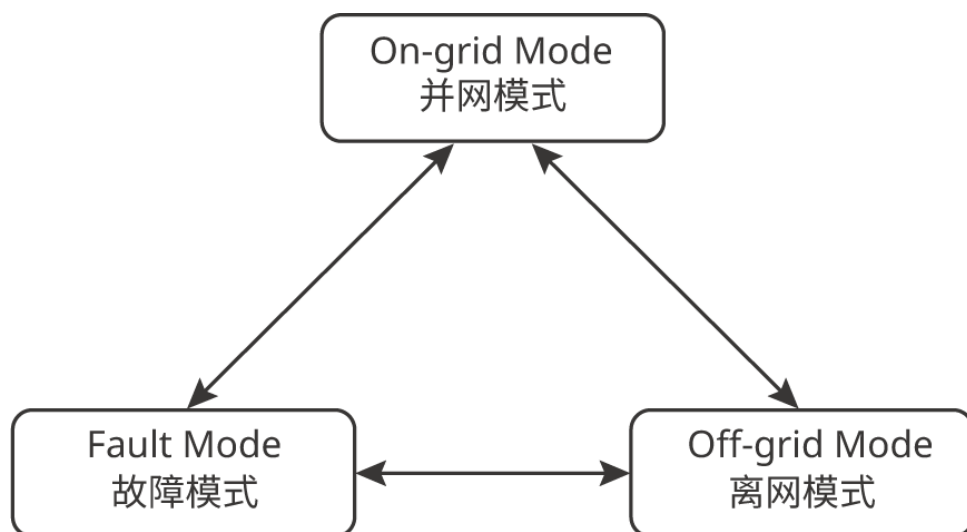


Figure3 750K

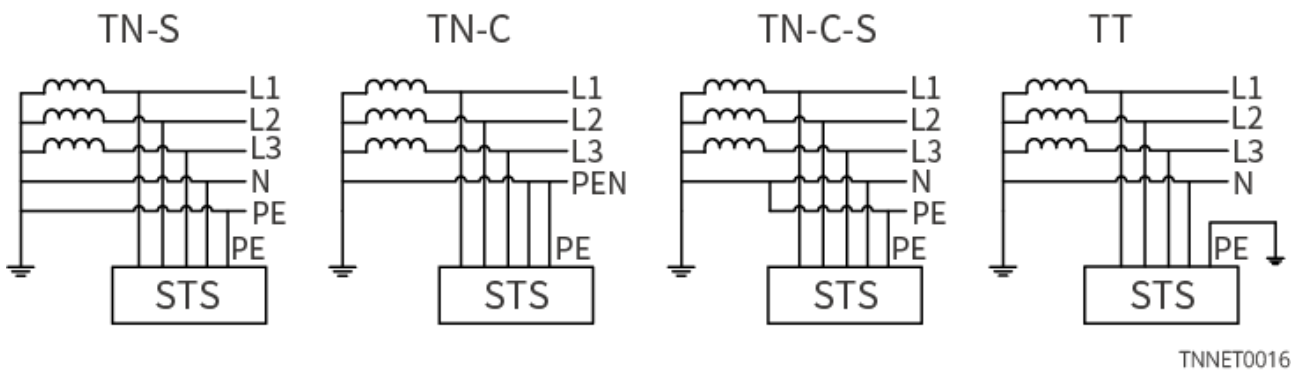
3.4 Operating Mode



STS10DSC0012

No.	Mode	Description
1	Grid-connected	When the grid is normal, the STS transfer switch is closed, and the system is in the grid-connected state.
2	Off-grid	When a Grid Power Outage occurs, the STS transfer switch is open, and the system is in the off-grid state.
3	Fault	The fault indicator light is red. Please handle it promptly.

3.5 Supported Grid Types



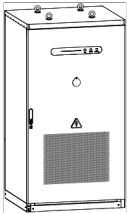
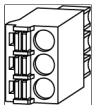
4 Equipment Inspection and Storage

4.1 Equipment Inspection

Before accepting delivery of the product, please carefully inspect the following:

1. Check the outer packaging for damage, such as deformation, holes, cracks, or other signs that could cause damage to the equipment inside the box. If damaged, do not open the packaging and contact your dealer.
2. Check whether the inverter model is correct. If it does not match, do not open the packaging and contact your dealer.
3. Check that the delivered items are of the correct type and quantity, and that the appearance is free from damage. If any damage is found, contact your dealer.

4.2 Deliverables

Components	Description	Components	Description
	STS cabinet ×1		Firestop putty 375K:×30 750K:×45
	Connector ×2		Connector ×1
	Expansion bolts ×4		Fastening bolts 375K:×50 750K:×80

Components	Description	Components	Description
	Documentation ×1	-	-

Table19

4.3 Equipment Storage

If the equipment is not put into operation immediately, store it according to the following requirements:

1. Ensure that the outer packaging has not been removed and that the desiccant inside the box has not been lost.
2. Ensure that the storage environment is clean, the temperature and humidity are within suitable ranges, and there is no condensation.
3. Ensure that the stacking height and direction of the equipment comply with the requirements indicated on the packaging label.
4. Ensure that there is no risk of the equipment tipping over after stacking.
5. If the equipment has been stored for more than two years, or has been installed but not operated for more than 6 months, it is recommended to have it inspected and tested by professionals before being put into operation.
6. To ensure the electrical performance of the internal electronic components remains good, it is recommended to power on the equipment once every 6 months during storage. If the equipment has not been powered on for more than 6 months, it is recommended to have it inspected and tested by professionals before being put into operation.

5 Installation

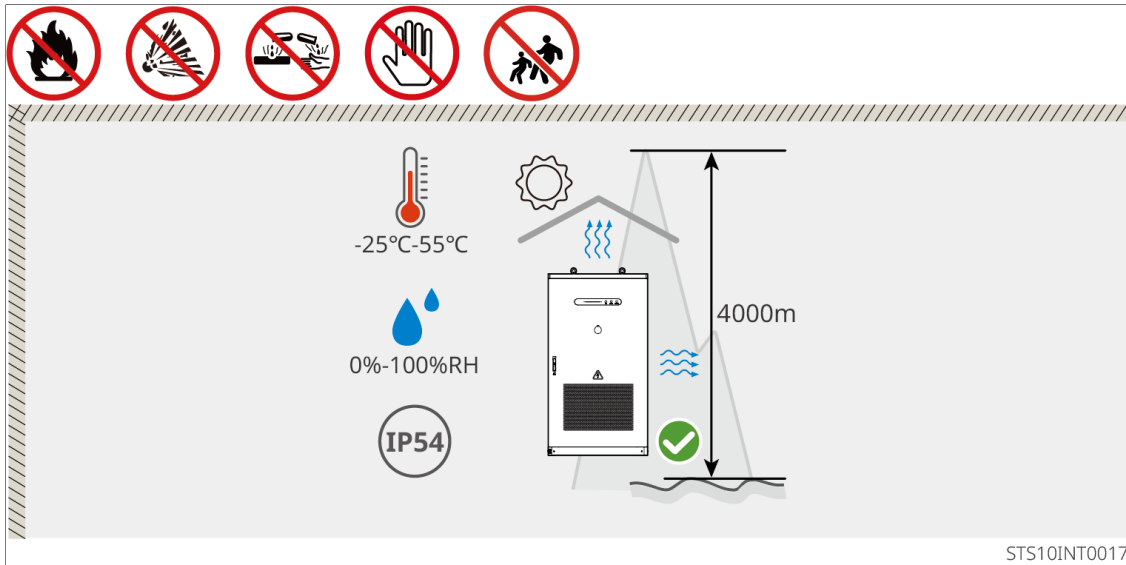
5.1 Installation Requirements

Installation Environment Requirements

1. The equipment must not be installed in flammable, explosive, corrosive, or similar environments.
2. The installation space must meet the ventilation, heat dissipation, and operating space requirements of the equipment.
3. The equipment's Ingress Protection Rating meets the requirements for outdoor installation, and the temperature and humidity of the installation environment must be within suitable ranges.
4. The equipment must be installed away from direct sunlight, rain, snow accumulation, and similar conditions. A sheltered installation location is recommended, and a sunshade canopy may be erected if necessary.
5. The installation location must be out of the reach of children and away from positions where the equipment can be easily touched.
6. The installation height must facilitate operation and maintenance, ensuring that the indicator lights and all labels of the equipment are clearly visible and that the wiring terminals are easy to operate.
7. The installation altitude of the equipment must be below 4000 m.
8. The equipment will be subject to corrosion if installed in salt-damage areas. Salt-damage areas refer to areas within 500 m of the coastline or areas affected by sea wind. The areas affected by sea wind vary depending on meteorological conditions (e.g., typhoons, seasonal winds) or terrain (e.g., embankments, hills).
9. If the equipment is installed in public places other than work and living areas (such as parking lots, stations, factory buildings, etc.), install a protective net outside the equipment and erect safety warning signs for isolation, and prohibit unrelated personnel from approaching, to avoid personal injury or property damage caused by accidental contact by non-professional personnel or other reasons during equipment operation.
10. Stay away from strong magnetic field environments to avoid electromagnetic interference. If there are radio stations or wireless communication devices below 30MHz near the installation location, install the equipment according to the following requirements:
 - Add a multi-turn ferrite core at the AC wiring of the equipment, or add a low-pass

EMI filter.

- The distance between the equipment and wireless electromagnetic interference devices exceeds 30m.



Installation Angle Requirements

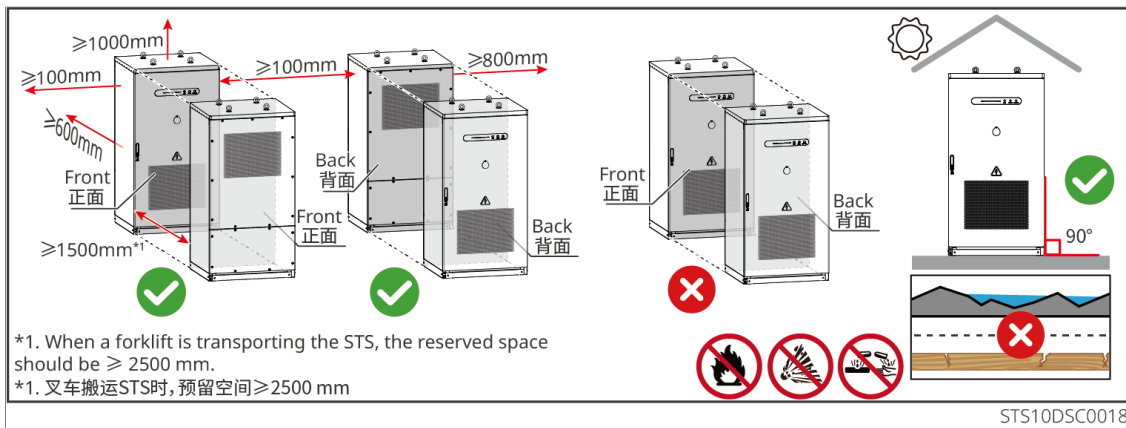
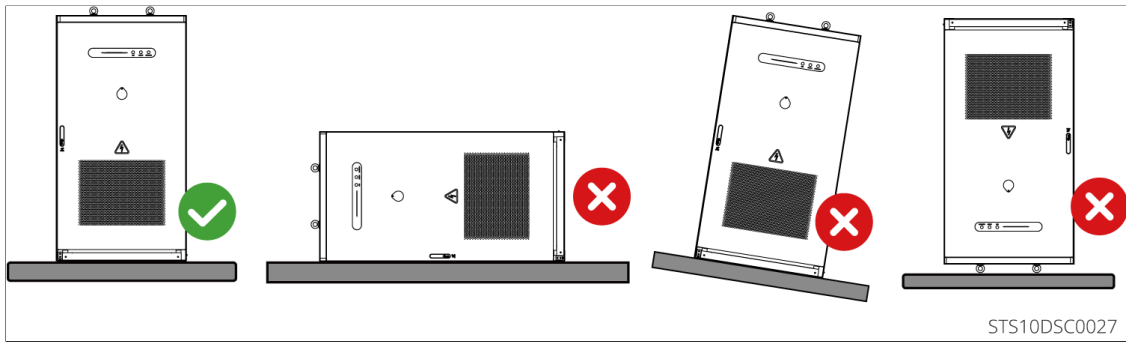
The equipment must be installed vertically and stably on the foundation to ensure stable operation and normal heat dissipation.

Do not tilt, lay sideways, or invert the equipment, as these may cause equipment damage, unstable operation, or safety hazards.

Installation Space Requirements

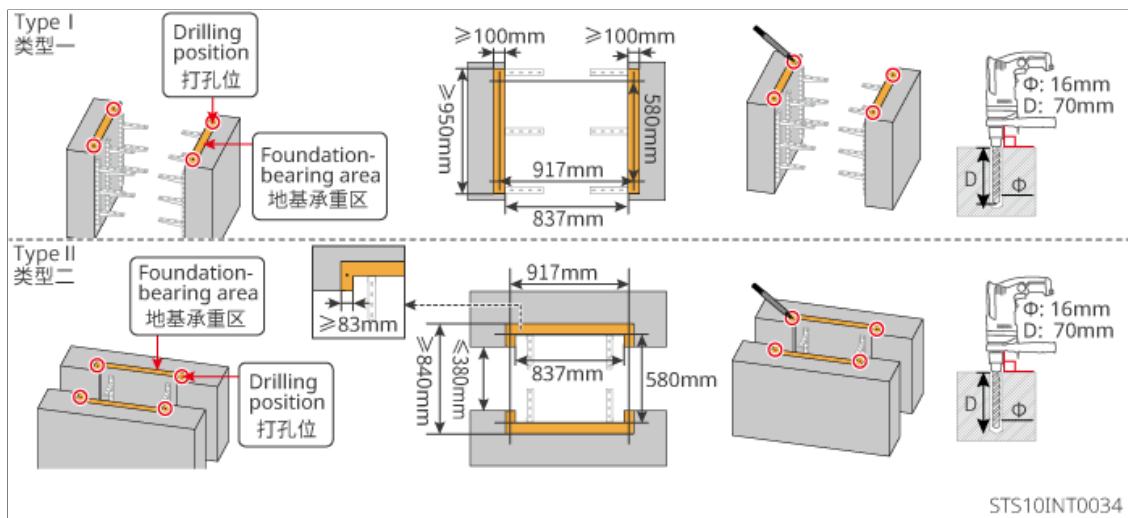
NOTICE

When using a forklift, the front and rear spacing of the equipment must be equal to or greater than 2.5m.



Installation Foundation Requirements

- The installation foundation of the equipment must be constructed with C35 concrete or other concrete of equivalent performance.
- Before installation, ensure the base is level, firm, flat, dry, and has sufficient load-bearing capacity. Avoid any depressions or tilting.
- The base needs to have pre-embedded conduits or reserved cable outlets to facilitate cable routing of the equipment.
- The equipment uses bottom cable entry, so the foundation must have dust-proof and rodent-proof design to prevent foreign objects from entering.
- The foundation must have water accumulation and moisture prevention design to prevent cable aging and short circuits, which may affect normal operation of the equipment.
- Since the equipment cables are relatively thick, the pre-embedded conduits/reserved cable outlets should fully reserve space for cables during design to ensure smooth connection and prevent wear.

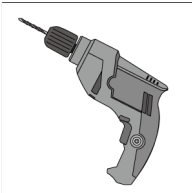
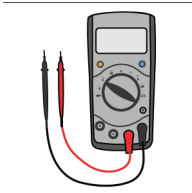
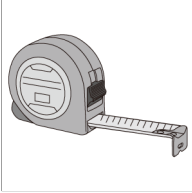


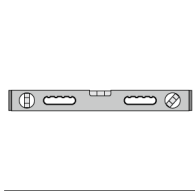
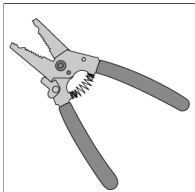
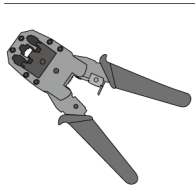
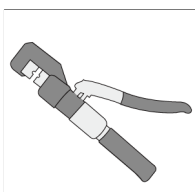
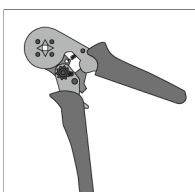
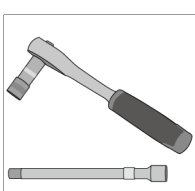
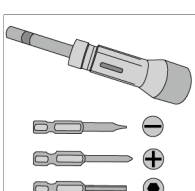
5.2 Tool Requirements

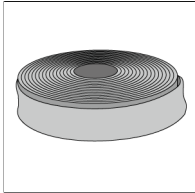
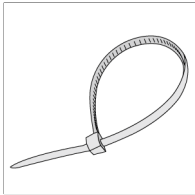
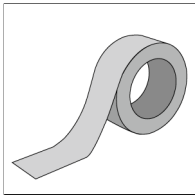
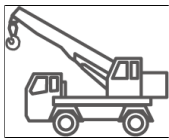
NOTICE

During installation, the following installation tools are recommended. If necessary, other auxiliary tools may be used on site.

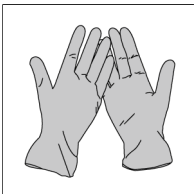
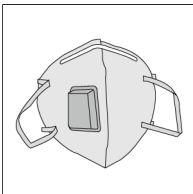
Installation Tools

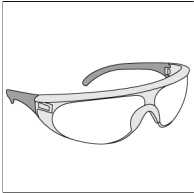
Tool Type	Description	Tool Type	Description
	Hammer drill (drill bit 16mm)		Multimeter
	Tape measure		Utility knife

Tool Type	Description	Tool Type	Description
	Rubber mallet		Spirit level
	Marker pen		Diagonal cutting pliers
	Wire stripping pliers		RJ45 crimping tool
	Hydraulic crimping tool		Tubular terminal crimping pliers
	Socket wrench set		Torque screwdriver

Tool Type	Description	Tool Type	Description
	Heat gun		Heat shrink tubing
	Vacuum cleaner		Cable ties
	Open-end wrench		Insulation tape
	Forklift		Crane

Personal Protective Equipment

Tool Type	Description	Tool Type	Description
	Insulated gloves, protective gloves		Dust mask

Tool Type	Description	Tool Type	Description
	Safety goggles		Safety shoes
	Protective clothing		Safety helmet

5.3 Equipment Inspection

Before accepting delivery of the product, please carefully inspect the following:

1. Check the outer packaging for damage, such as deformation, holes, cracks, or other signs that could cause damage to the equipment inside the box. If damaged, do not open the packaging and contact your dealer.
2. Check whether the STS model is correct. If it does not match, do not open the packaging and contact your dealer.
3. Check that the delivered items are of the correct type and quantity, and that the appearance is free from damage. If any damage is found, contact your dealer.

5.4 Handling Requirements

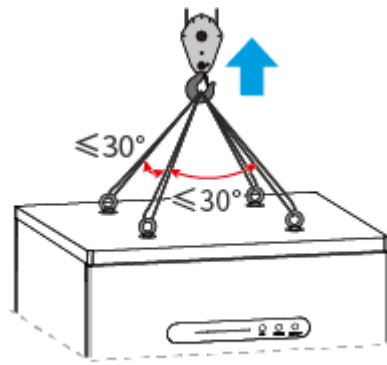
CAUTION

1. When performing operations such as transportation, transfer, and installation, the equipment must comply with the laws, regulations, and relevant standards of the country and region where it is located.
2. For the Protection of the equipment from damage during transportation, please ensure that the transport personnel have been professionally trained. During transportation, record the operation steps, keep the equipment balanced, and avoid the equipment from falling.
3. Before installation, the energy storage system must be moved to the installation site. During handling, to avoid personal injury or equipment damage, please note the following:
 - Please equip the corresponding personnel and tools according to the equipment Weight, so as to prevent the equipment from exceeding the weight range that the human body can handle and injuring personnel.
 - Please ensure that the equipment remains balanced during handling to avoid falling.
 - During equipment handling, please make sure the cabinet doors are locked.

NOTICE

- The equipment can be moved to the installation site by lifting or forklift.
- When handling the equipment by lifting, please use flexible lifting slings or straps. The load-bearing capacity of each strap must be $\geq 5t$.
- When using a forklift to handle the equipment, the load-bearing capacity of the forklift must be $\geq 5t$.
- The door panel surface stickers are vulnerable areas during installation and transportation. Please be careful.

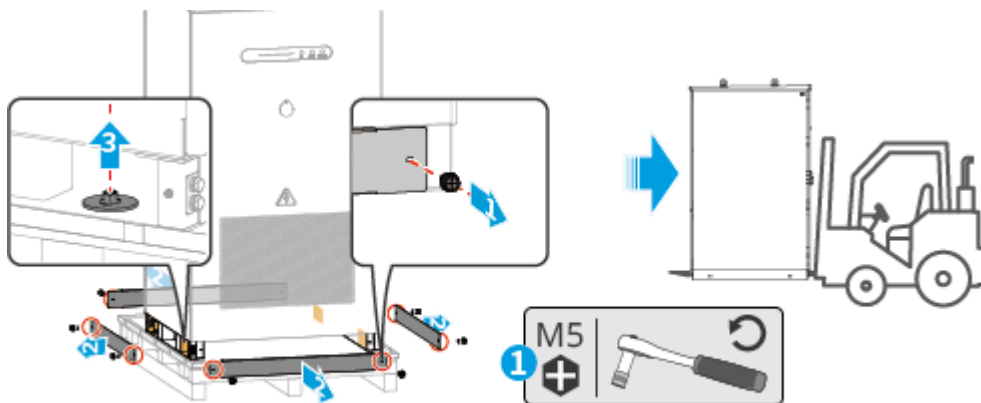
• Lifting and Handling



STS10INT0022

1. Use slings with hooks or U-shaped hooks to perform lifting operations on the equipment.
2. Use a lifting device to lift and transport the equipment.

• Forklift Handling



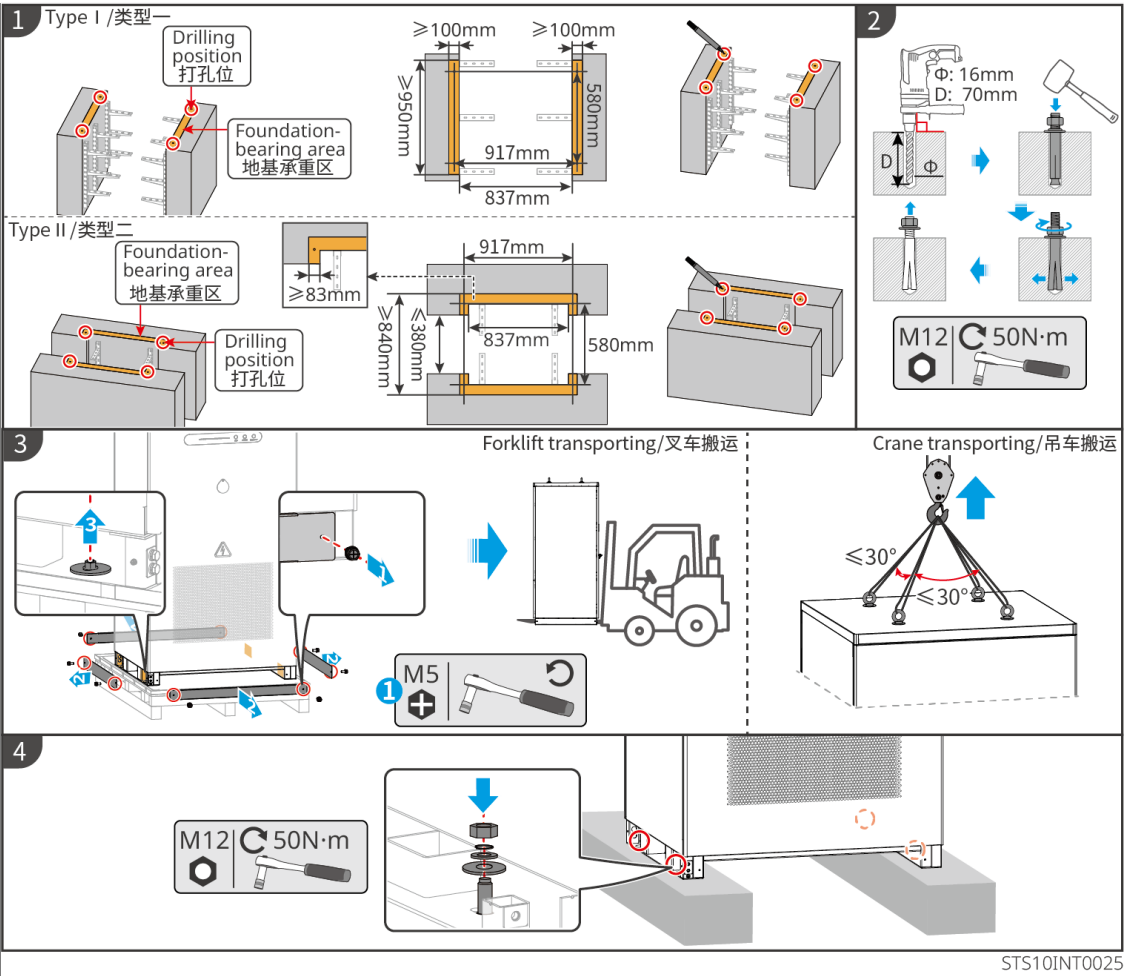
STS10INT0021

1. Remove the front and rear baffles of the equipment.
2. When using a forklift to handle the equipment, place the center of gravity of the equipment at the center of the forklift forks.

5.5 Install the Equipment.

1. Use a marker pen to mark the drilling positions on the foundation.
2. Use an impact drill to drill holes in the ground and install expansion bolts.
3. Transport the cabinet to the foundation and remove the surrounding panels.

4. Fasten the cabinet to the foundation.



6 Electrical Connection

DANGER

- All operations during the electrical connection process, as well as the specifications of cables and components used, must comply with local laws and regulations.
- Before making electrical cable connections, ensure that all upstream switches of the equipment are disconnected.
- Before making electrical connections, open all switches of the equipment to ensure that the equipment is de-energized. Working on live equipment is strictly prohibited, as it may cause electric shock and other hazards.
- Cables of the same type should be bundled together and routed separately from cables of different types. Mutual twisting or crossing is prohibited.
- If the cable is subjected to excessive tension, poor connection may result. When wiring, leave a certain length of cable before connecting it to the device terminal port.
- When crimping terminals, ensure that the conductor part of the cable is in full contact with the terminal. Do not crimp the cable insulation together with the terminal; otherwise, the equipment may fail to operate, or after operation, unreliable connections may cause heating, resulting in damage to the equipment's terminal block.
- Using cables in high-temperature environments may cause aging and damage to the insulation layer. The distance between cables and heat-generating components or the periphery of heat source areas shall be at least 30 mm.

NOTICE

- Before performing electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulated gloves as required.
- Only trained professionals are allowed to perform electrical connections and related operations.
- Keep the cabinet door key in a safe place.
- The cable colors in the figures in this document are for reference only. Specific cable specifications must comply with local regulatory requirements.

6.1 Preparation Before Wiring

Cable Preparation

No.	Cable	Type	Recommended Specifications	Description
1	GRID Port AC Cable BACK-UP Port AC Cable SMART Port AC Cable	Single-core outdoor copper wire (user-supplied)	• For 375K, connect 2 wires per port; for 750K, connect 4 wires per port. • The following are the specifications for a single cable: ◦ Conductor cross-sectional area of L1/L2/L3/N (S): 95mm² ◦ PE conductor cross-sectional area (S_{PE}): $\geq S/2\text{mm}^2$	User-supplied

No.	Cable	Type	Recommended Specifications	Description
2	INVERTER Port AC Cable	Single-core outdoor copper wire (user-supplied)	- Conductor cross-sectional area of L1/L2/L3/N (S): 70mm² - PE conductor cross-sectional area (S_{PE}): $\geq S/2\text{mm}^2$	User-supplied
3	Machine enclosure Protection earth wire	Single-core outdoor copper cable	Conductor cross-sectional area (S _{PE}): 35mm ²	User-supplied
4	Diesel Generator Control signal wire Load control signal wire EMS signal wire	Copper-core outdoor twisted pair cable compliant with local standards	Conductor cross-sectional area: 0.32~0.5mm ²	User-supplied
5	LAN communication cable	Standard shielded network cable with RJ45 connectors, CAT 5E or higher	-	User-supplied

Note:

The cable specifications recommended in the table are for reference only. When actually selecting cables, users need to comprehensively consider the influence of factors such as installation ambient temperature, laying method, number of parallel cables, voltage deviation, and thermal stability, and correct the current-carrying capacity using corresponding correction factors. The selected cable must meet the following requirement: cable current-carrying capacity $\geq$ Rated Current of the overcurrent Protection device $\geq$ maximum Rated Current.

Switch Preparation

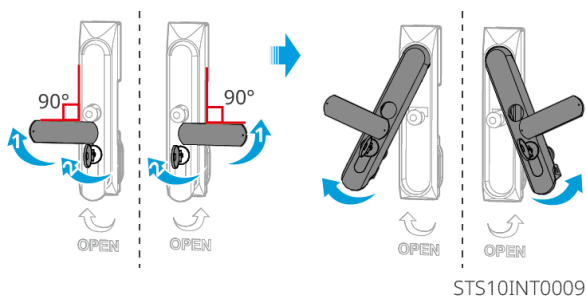
- To ensure safe disconnection from the grid under abnormal conditions, please select an appropriate overcurrent Protection device in accordance with local distribution regulations.
- Please select the switch specification based on the actual connected equipment. The following are the recommended specification requirements:

Port	Recommended Specifications	How to Obtain
INVERTER	• Built-in switch. Refer to the component introduction for specific switch specifications. • If additional preparation is required, select the switch specifications based on the actual connected equipment.	User-supplied
SMART-PORT, BACK-UP, GRID	https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf built-in switch • 375K: Rated Current is 630A and above. • 750K: Rated Current is 1250A and above.	User-supplied

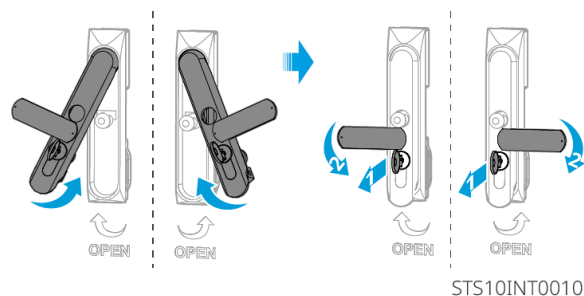
Cabinet Door and Cover Panel Operation

• Cabinet door

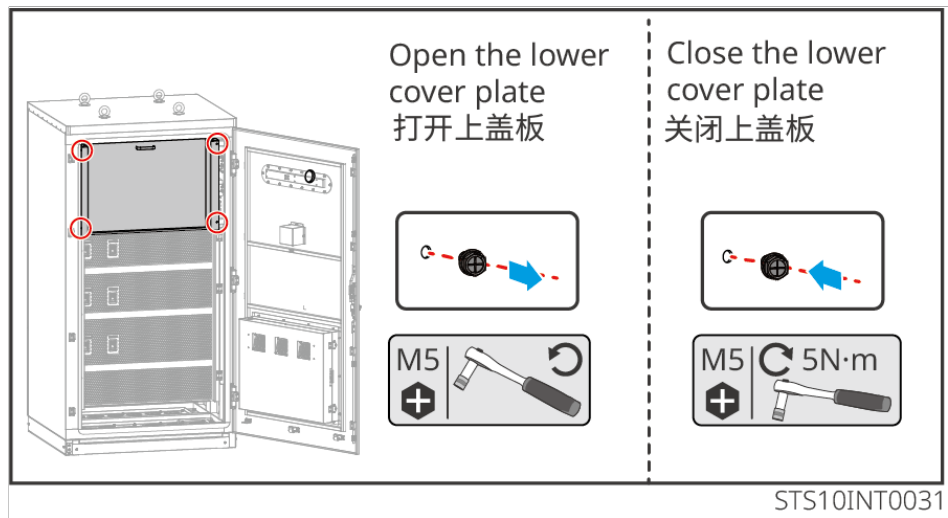
Open the cabinet door



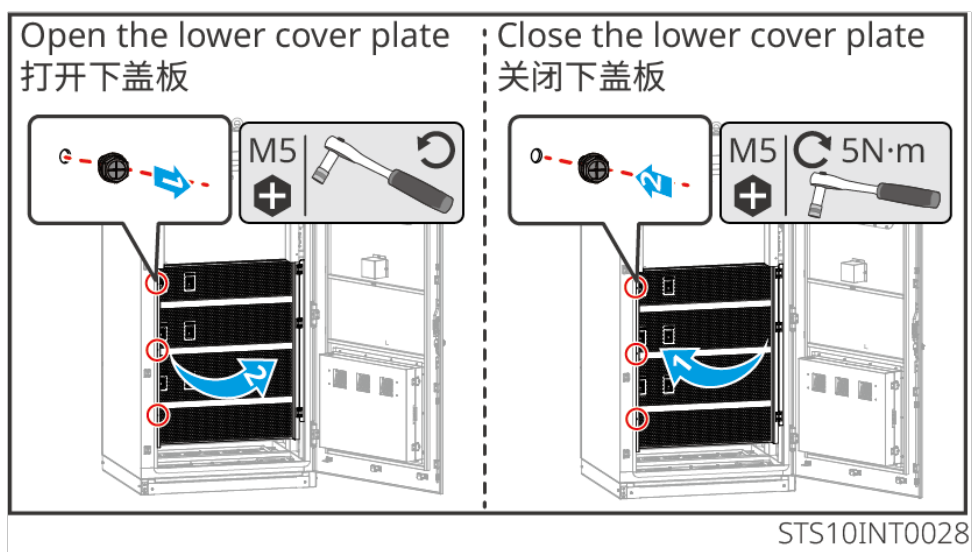
Close the cabinet door



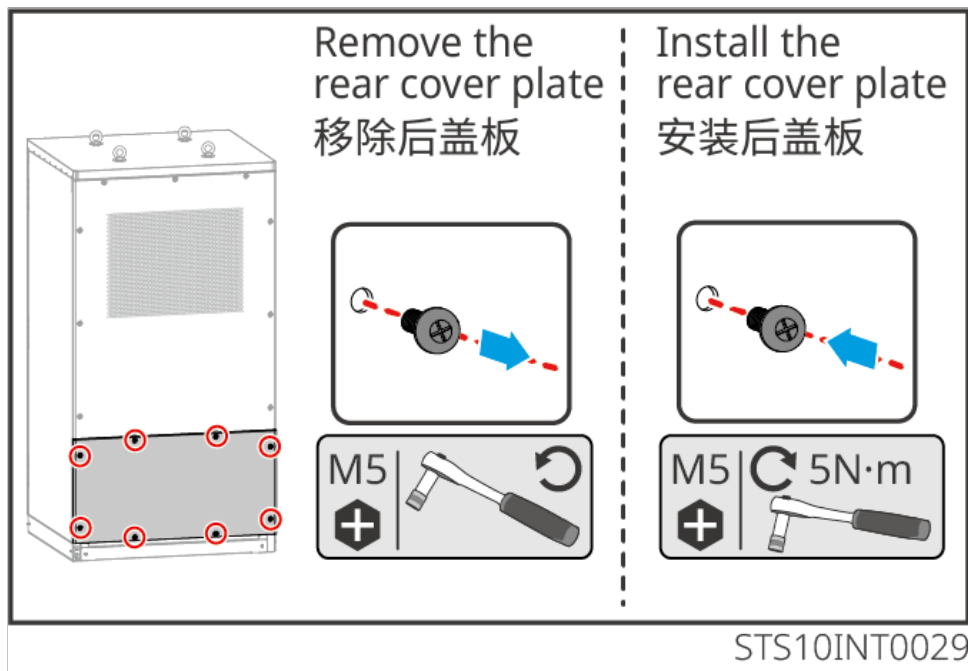
- **Top cover panel**



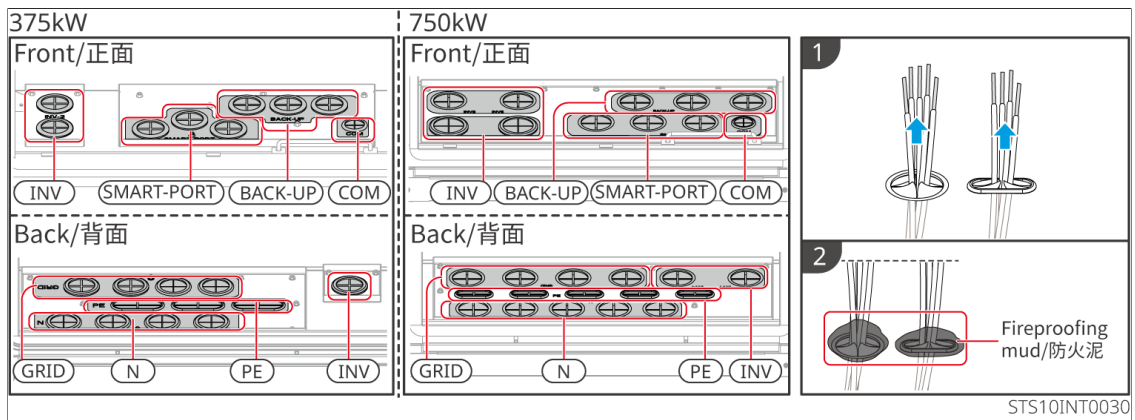
- **Bottom cover panel**



- **Rear cover panel**



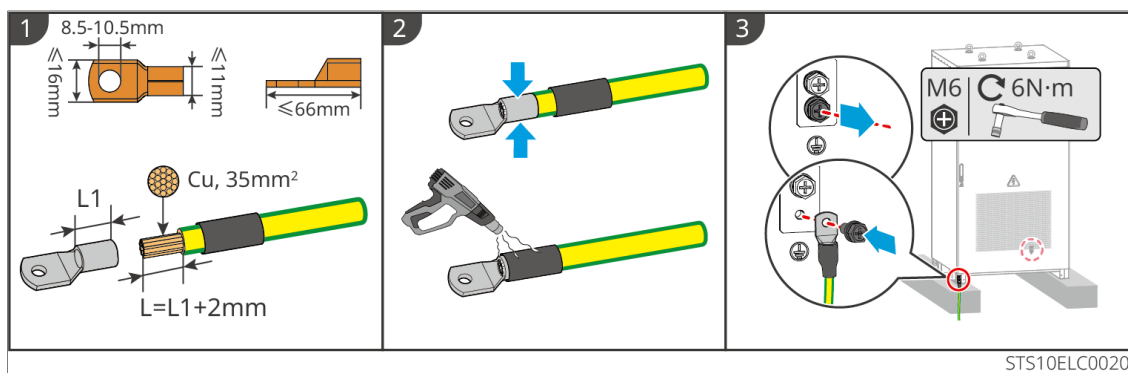
Wiring Port and Cable Protection Plate Operation



6.2 Connecting the Protection Ground Wire

WARNING

- Before operating the equipment, ensure that the system is reliably grounded and appropriate protective measures are taken; otherwise, there may be a risk of electric shock.
- To improve the corrosion resistance of the terminals, after completing the ground wire connection, it is recommended to apply silicone sealant or paint on the outside of the grounding terminals for protection.



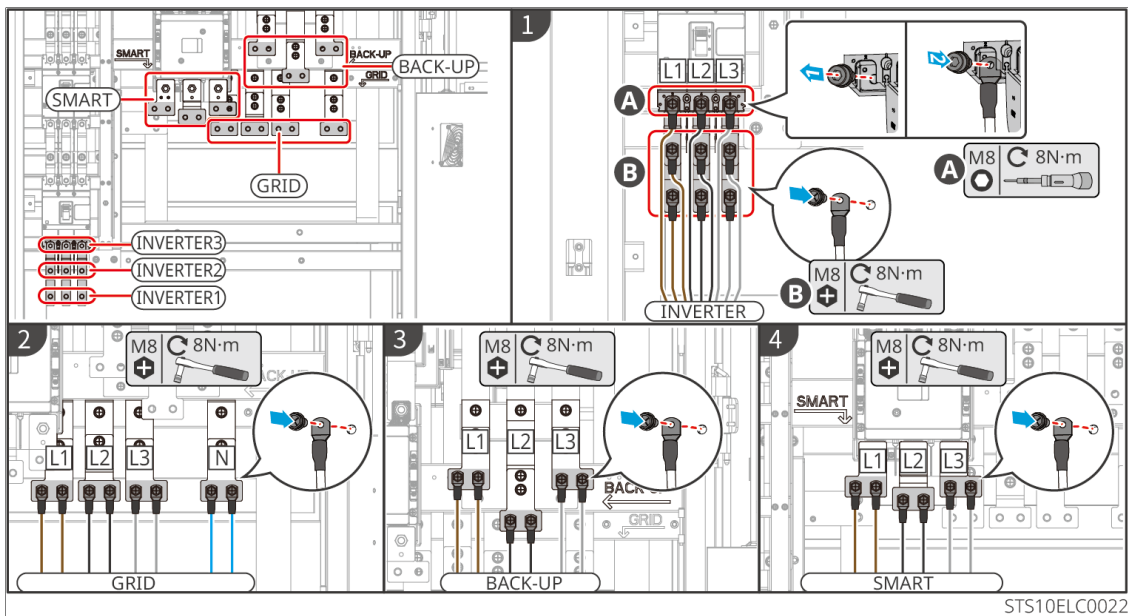
6.3 Connect the AC Cables

Connect the INVERTER & BACK-up & GRID & SMART-PORT AC Cables

1. Prepare cables and terminals, and perform crimping.
2. Unscrew the screws on the copper busbar, and use the screws to fix the crimped cables onto the copper busbar.

端口 Port	线缆材质 Cable Material	线缆类型 Cable Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	S (mm ²)
GRID BACK-UP SMART	Cu	L1/L2/L3/N	8.5-10.5	≤25	≤18	≤87	Φ: 16.9-19	95
		PE		≤19	≤14	≤72	Φ: 13-18	50
Inverter	Cu	L1/L2/L3/N	8.5-10.5	≤22	≤15	≤80	Φ: 15-16	70
		PE		≤16	≤11	≤66	Φ: 12-16	35

STS10ELC0021



STS10ELC0022

Figure4 375K

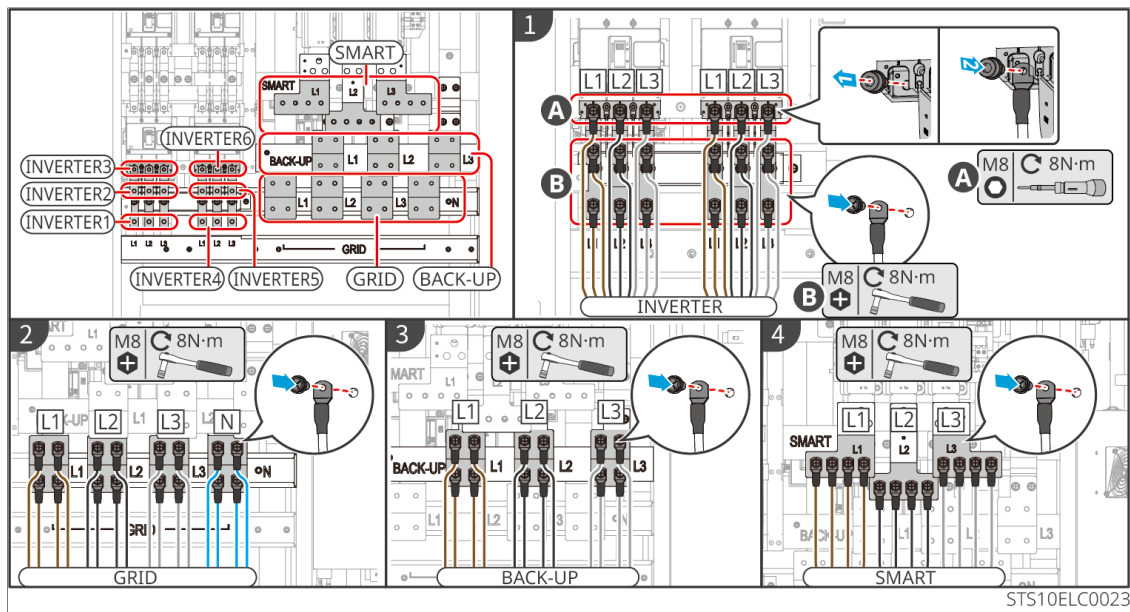


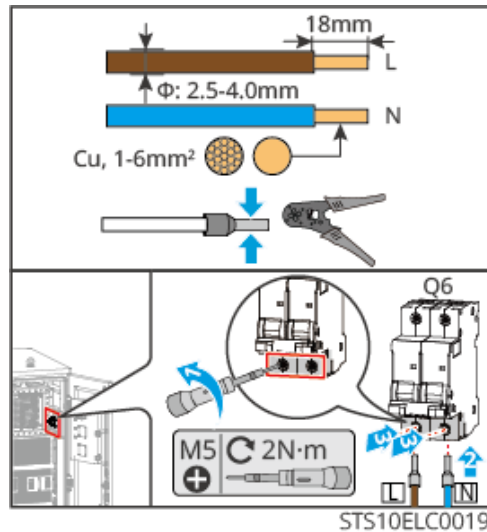
Figure5 750K

Connect the SEC3000C Power Cable

NOTICE

It is recommended to configure a UPS between the power supply port and the SEC3000C to ensure stable operation of the SEC3000C.

1. Prepare single-phase AC cables and terminals. For specific requirements, please refer to [SEC3000C User Manual](#).
2. Crimp the terminals.
3. Loosen the screws at the bottom of the circuit breaker, insert the terminal, and then tighten.



6.4 Connecting Communication Cables

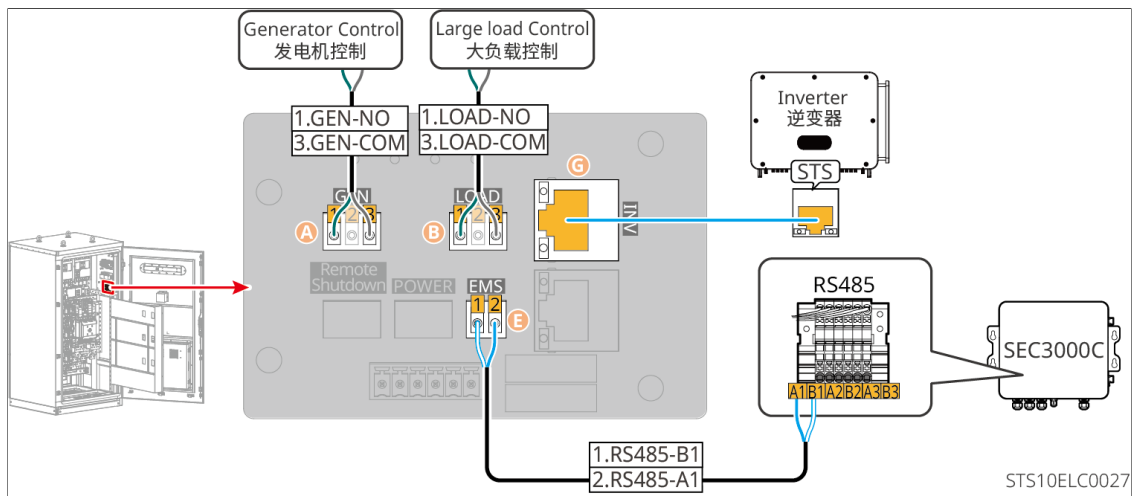
NOTICE

- The communication cable length between the STS and its nearest energy storage system shall not exceed 45 m.
- It is recommended to install a UPS between the STS and the SEC3000C.

Wiring Overview

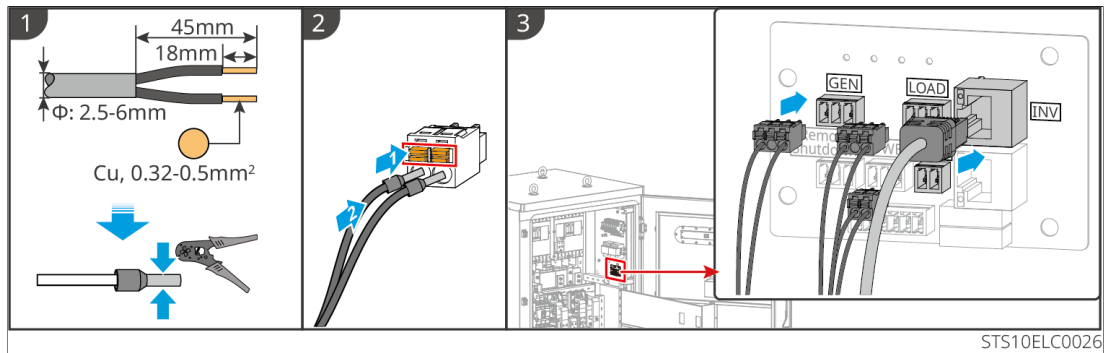
Port		Function	Description
A	GEN	Diesel Generator Dry Node Contact	Supports connecting the Diesel Generator Control signal to control start/stop of the generator. DO contact rating: 24V DC @ 1A, NO/COM normally open contact.
B	LOAD	Large Load Dry Contact	Connect dry contact signals to implement the load control function. DO contact rating: 24V DC @ 1A, NO/COM normally open contact.

Port		Function	Description
E	EMS	SEC Communication Port	Connect to SEC, using RS485 communication.
F	INV	Inverter Communication Port	Connect to inverter, using RS485 communication.



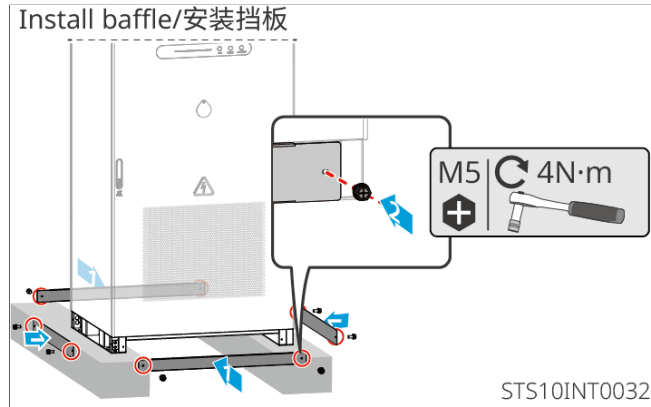
Operating Steps

1. Prepare the communication cable and crimp the terminals.
2. Route the communication cable through the bottom COM port and insert it into the corresponding communication port.

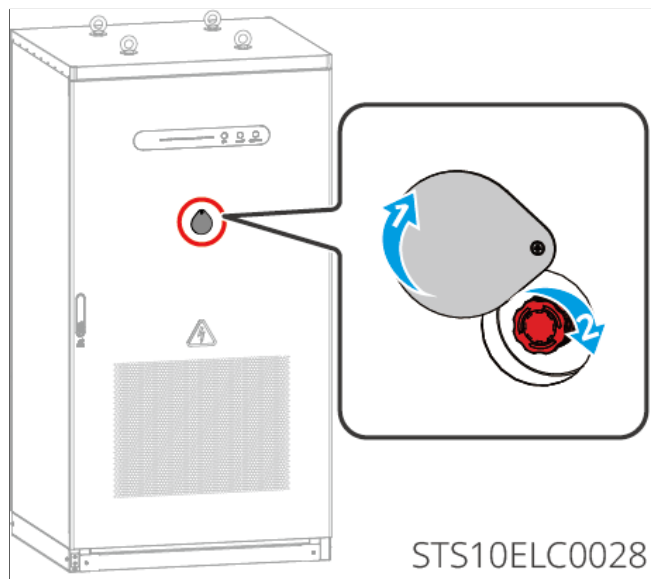


6.5 Operations After Wiring

Step 1:Install the baffle.



Step 2:Release the EPO switch.

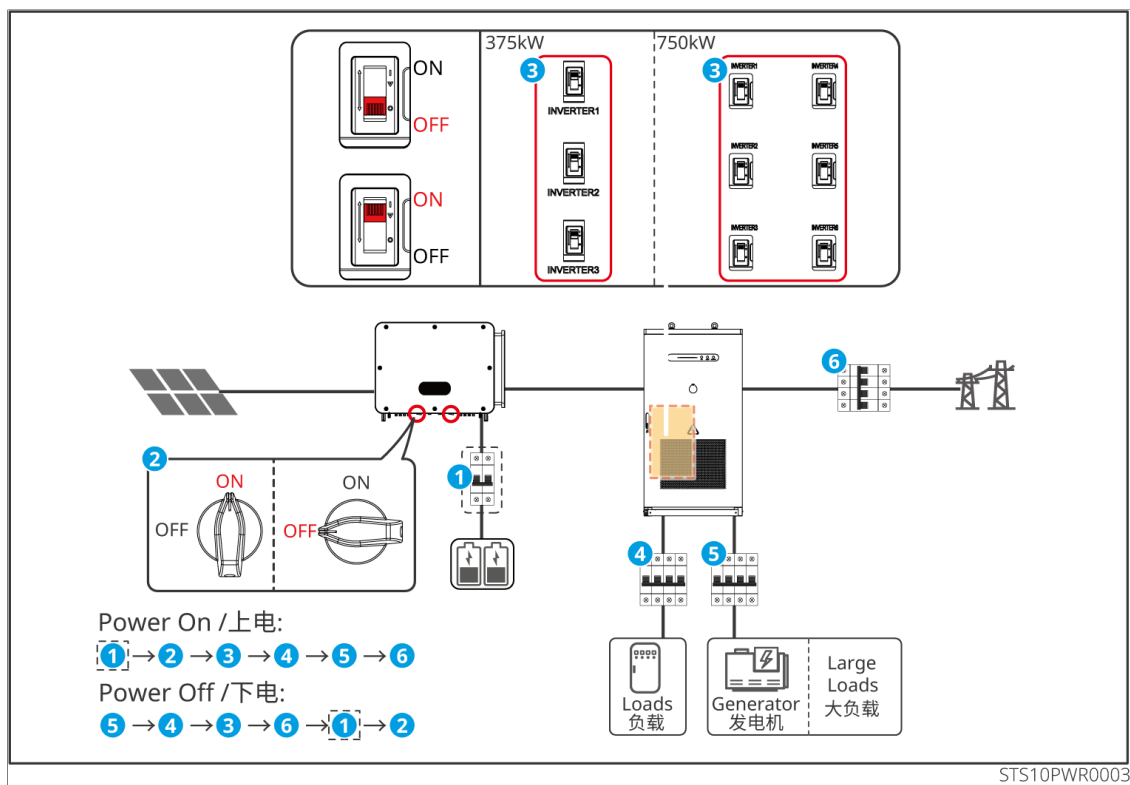


7 Equipment Trial Operation

7.1 Pre-Power-on Inspection

No.	Inspection items
1	The equipment is firmly installed, the installation location is convenient for operation and maintenance, the installation space is conducive to ventilation and heat dissipation, and the installation environment is clean and tidy.
2	Protection ground wire, power wire, and communication wire are connected correctly and securely.
3	Cable bundling meets routing requirements, distribution is reasonable, and https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf damage.
4	Unused cable entry holes and ports must be securely connected using the terminals provided in the accessories and sealed.
5	Ensure that used cable entry holes are sealed.
6	The voltage and frequency at the grid connection point of the equipment meet the grid connection requirements.

7.2 Powering on the Equipment



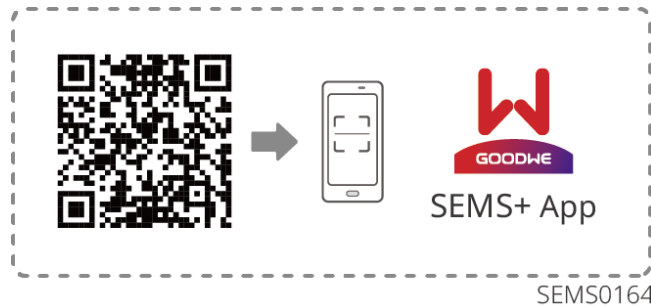
STS10PWR0003

8 Monitoring the Power Station via SEMS+

SEMS+ is a monitoring platform that can communicate with devices via WiFi, LAN, or 4G. The following are common functions of SEMS+:

1. Manage organizations or user information, etc.
2. Add and monitor power plant information, etc.
3. Maintain equipment.

Scan the QR code below to download and install.



For detailed functions, please refer to the SEMS+ User Manual. The user manual can be obtained from the official website or by scanning the QR code below.

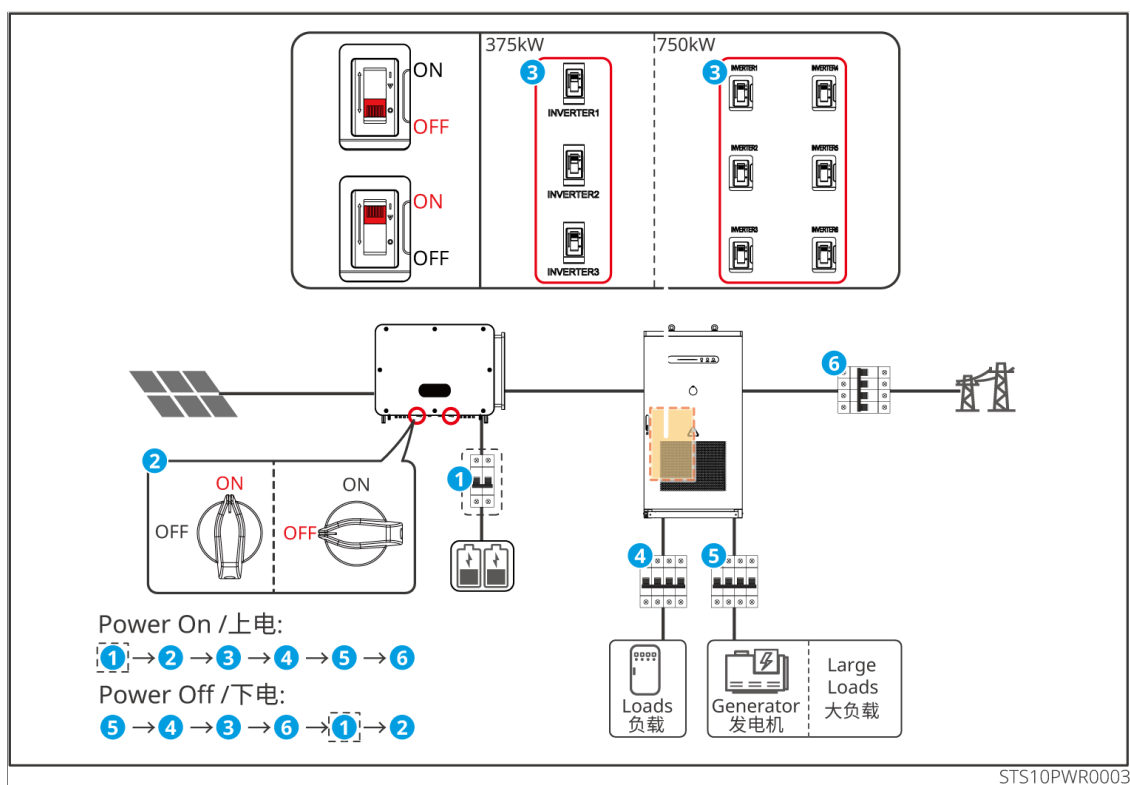


9 Commissioning via SEC3000C

For SEC3000C commissioning content, refer to the corresponding user manual "[SEC3000C User Manual](#)".

10 System Maintenance

10.1 Powering off the Equipment



10.2 Troubleshooting

Please perform troubleshooting according to the following methods. If the troubleshooting methods cannot help you, contact the after-sales service center. When contacting the after-sales service center, please collect the following information to facilitate quick problem resolution.

1. Equipment information, such as serial number, software version, equipment installation time, fault occurrence time, fault occurrence frequency, etc.
2. Equipment installation environment, such as weather conditions, installation location, etc. It is recommended to provide photos, videos and other files to assist in problem analysis.

3. Grid conditions.

Fault type	Fault indication	Troubleshooting
MC control board fault	NTC Abnormal (ambient temperature)	Please contact the dealer/GoodWe after-sales service center.
	Internal Fan Abnormal	Please contact the dealer/GoodWe after-sales service center.
	DSP Communication Failure	1. After power-off, check whether the PCS communication RJ45 port controlled by MC and the COM port RJ45 of the 261 integrated cabinet LC are connected or have any abnormality. 2. After eliminating the abnormality and re-powering on, if the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Contactor Communication Failure	1. After power-off, check whether the CN20 control port controlled by MC and the Phoenix terminal of the Jingui switch are connected or have any abnormality. 2. After eliminating the abnormality and re-powering on, if the fault still exists, please contact the dealer/GoodWe after-sales service center.
	DG Communication Failure	1. After power-off, check whether the RS485 port of the DG terminal block inside the cabinet and the communication terminal on the DG side are connected or have any abnormality. 2. After eliminating the abnormality and re-powering on, if the fault still exists, please contact the dealer/GoodWe after-sales service center.

Fault type	Fault indication	Troubleshooting
EPO	Internal Cabinet Fault	1. If the EPO button is pressed by accidental misoperation, after confirming that the STS is completely powered off and safe, rotate the EPO button to restore. 2. If the EPO is pressed in an emergency due to a dangerous situation, please contact the dealer/GoodWe after-sales service center.
Contactor Failure 1	Magnetic Latching Unexpected Opening Warning	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Magnetic Latching Unexpected Closing Warning	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Main Magnetic Latching Closing Failure	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Main Magnetic Latching Opening Failure	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.

Fault type	Fault indication	Troubleshooting
	Relay Abnormally Opens in Closed State	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Relay Abnormally Closes in Open State	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Relay Closing Failure	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Relay Breaking Failure	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Phase A Current Interruption Timeout During Opening	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Phase B Current Interruption Timeout During Opening	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.

Fault type	Fault indication	Troubleshooting
	Phase C Current Interruption Timeout During Opening	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Three-Phase Input Power Loss	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	24V Power Supply Undervoltage	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Magnetic Latching Drive Undervoltage	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Dual-Machine Mode Setting Error	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Internal 485 Communication Loss	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
Contactor Failure 2	Parallel Slave Operation Failure	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.

Fault type	Fault indication	Troubleshooting
	N phase wiring error	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	ABC Phase Sequence Error	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Phase loss error	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	MCU over-temperature error	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	One opens and one closes during parallel operation	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Both units close during interlock	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
	Control contacts triggered simultaneously	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.

Fault type	Fault indication	Troubleshooting
	Open/close switching frequency too high	Power off the entire system and power it back on after 5 minutes. If the fault still exists, please contact the dealer/GoodWe after-sales service center.
Overload Protection 1	Overload Protection (GRID)	1. Power off the entire system and restart it after 5 minutes. If the fault disappears, it is OK. 2. If it occurs twice or more within one month, please contact the dealer/GoodWe after-sales service center.
Overload Protection 2	Overload Protection (Smart-port)	1. Power off the entire system and restart it after 5 minutes. If the fault disappears, it is OK. 2. If it occurs twice or more within one month, please contact the dealer/GoodWe after-sales service center.
Lightning protection fault 1	Grid-side SPD1 activated	Check whether the SPD1 surge arrester has activated. Contact the dealer/GoodWe after-sales service center and report the activation status.
Lightning protection fault 2	Off-grid side SPD2 activated	Check whether the SPD1 surge arrester has activated. Contact the dealer/GoodWe after-sales service center and report the activation status.

10.3 Periodic Maintenance

DANGER

Before maintenance, ensure that the STS is completely powered off. Live operation may cause equipment damage or electric shock hazard.

Maintenance content	Maintenance method	Maintenance cycle
System cleaning	- Check the heat sink and air inlet/outlet for foreign objects and dust. - Check whether the fan and dust-proof net are clean, https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf dust accumulation	Once every six months
Fan	Check whether the fan operates normally, whether there are abnormal noises, and whether its appearance is normal.	Once a year
Electrical Connection	Check whether the electrical connections are loose, whether the cable appearance is damaged, and whether there is exposed copper.	1 time/half year - 1 time/year
Sealing	Check whether the sealing of the equipment cable entry hole meets the requirements. If the gap is too large or the hole is not sealed, reseal it.	Once a year

10.4 Equipment Removal

CAUTION

- Before removing the STS, ensure that the device is completely powered off.
- When performing operations, wear personal protective equipment.

1. Open the cabinet door.
2. Disconnect all electrical connections of the STS, including power lines, communication lines, and Protection grounding conductor.

3. Unscrew the fixing screws on the STS base.
4. Use lifting or a forklift to move the STS away from the base.
5. Store the equipment properly. If it is to be put into service later, ensure that the storage conditions meet the requirements.

10.5 Equipment Scrapping

When the equipment can no longer be used and needs to be scrapped, dispose of it in accordance with the electrical waste disposal requirements of the country/region where the equipment is located. Do not dispose of the equipment as household waste.

11 Technical Data

Technical Data	GW375K-STS-A-G10	GW750K-STS-A-G10
Grid side		
Nominal Voltage (V) ^{*1}	127/220,220/380, 230/400, 240/415, 3L/N/PE	127/220,220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V) ^{*2}	114~280 (according to local standard)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60
Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65
Rated. Current (A)	543.5	1087
Max. Current (A)	543.5	1087
Rated Power (kW) ^{*3}	375@400V(200@220V)	750@400V(400@220V)
Max. Apparent Power (kVA) ^{*4}	375@400V(200@220V)	750@400V(400@220V)
Rated conditional short-circuit current (kA)	10	20
Back-up side		
Nominal Voltage (V) ^{*1}	127/220,220/380, 230/400, 240/415, 3L/N/PE	127/220,220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V) ^{*2}	114~280 (according to local standard)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60

Technical Data	GW375K-STS-A-G10	GW750K-STS-A-G10
Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65
Rated. Current (A)	543.5	1087
Max. Current (A)	543.5	1087
Rated Power (kW) ^{*3}	375@400V(200@220V)	750@400V(400@220V)
Max. Apparent Power (kVA) ^{*4}	375@400V(200@220V)	750@400V(400@220V)
Rated conditional short-circuit current (kA)	10	20
Smart Port side		
Nominal Voltage (V) ^{*1}	127/220,220/380, 230/400, 240/415, 3L/N/PE	127/220,220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V) ^{*2}	114~280 (according to local standard)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60
Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65
Rated. Current (A)	543.5	1087
Max. Current (A)	543.5	1087
Rated Power (kW) ^{*3}	375@400V(200@220V)	750@400V(400@220V)
Max. Apparent Power (kVA) ^{*4}	375@400V(200@220V)	750@400V(400@220V)
Rated conditional short-circuit current (kA)	10	20
Inverter side		

Technical Data	GW375K-STS-A-G10	GW750K-STS-A-G10
Nominal Voltage (V) ^{*1}	127/220,220/380, 230/400, 240/415, 3L/N/PE	127/220,220/380, 230/400, 240/415, 3L/N/PE
Voltage Range (V) ^{*2}	114~280 (according to local standard)	114~280 (according to local standard)
Nominal Frequency (Hz)	50/60	50/60
Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65
Rated. Current (A)	210 x 3	210 x 6
Max. Current (A)	210 x 3	210 x 6
Rated Power (kW)	125(75@220V) x 3	125(75@220V) x 6
Max. Apparent Power (kVA)	125(75@220V) x 3	125(75@220V) x 6
Rated conditional short-circuit current (kA)	10	20
General Data		
On/Off Grid Transfer Time (ms)	<20	<20
Operating Temperature Range (°C)	-35~+60	-35~+60
Installation Type	Indoor/Outdoor	Indoor/Outdoor
Storage Temperature (°C)	-40~+70	-40~+70
Relative Humidity	0~100%	0~100%
Pollution Degree	III	III

Technical Data	GW375K-STS-A-G10	GW750K-STS-A-G10
Type of Electrical Supply System	TN-S, TN-C, TN-C-S, TT	TN-S, TN-C, TN-C-S, TT
Stationary or Movable	Stationary	Stationary
Type Of Short-circuit Protective Device	Icc	Icc
Max. Operating Altitude (m)	4000	4000
Cooling Method	Intelligent air cooling	Intelligent air cooling
Communication	RS485	
Weight (kg)	395	500
Dimension (W×H×D mm)	1000 x 1900 x 870	1000 x 1900 x 870
Mounting Method	Floor Mounted	Floor Mounted
Noise Emission (dB)	<60	<60
Ingress Protection Rating	IP54	IP54
Overvoltage Category	III	III
Protective Class	I	I
• *1: For Colombia, the Nominal Voltage(V) is :127/220, 220/380, 230/400, 240/415, 3φ • *2: For Colombia, the Voltage Range(V) is: 220, 380, 400, 415, 3φ(+5%/-10%) • GW375K-STS-A-G10: *3: When the phase voltage is 220V, the Rated Power is 358 kW. *4: When the phase voltage is 220V, the Max. Apparent Power is 358 kVA. • GW750K-STS-A-G10: *3: When the phase voltage is 220V, the Rated Power is 717 kW. *4: When the phase voltage is 220V, the Max. Apparent Power is 717 kVA.		

12 Contact Details

GoodWe Technologies Co., Ltd.
No. 90 Zijin Rd., New District, Suzhou, China
en.goodwe.com
service@goodwe.com