

Step 3: Unscrew M5 butterfly nuts to remove the cable hole cover, and unscrew M6 screws to open the cable clamp.

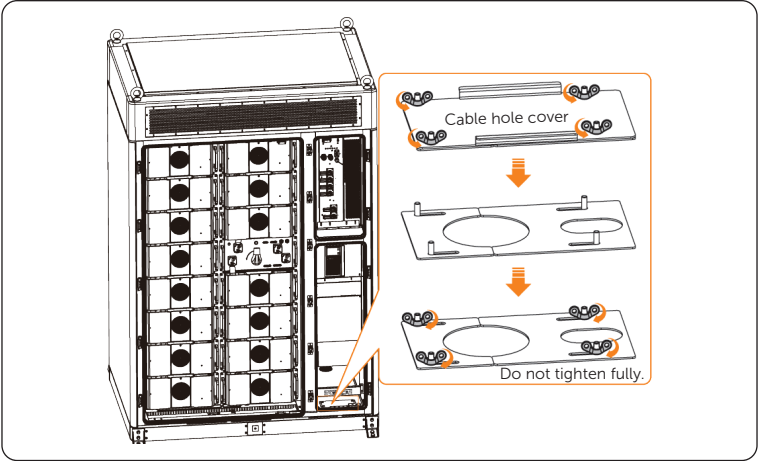


Figure 7-11 Unscrewing M5 butterfly nuts

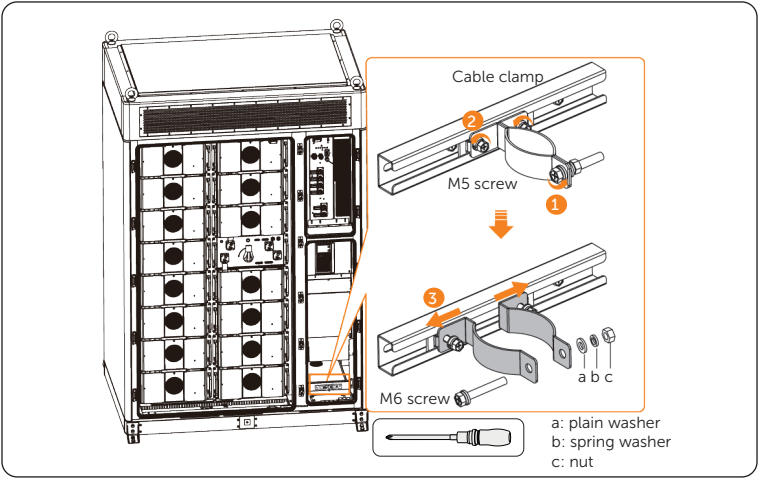


Figure 7-12 Unscrewing M6 screw

Step 4: Unscrew M4 screws to remove the cover.

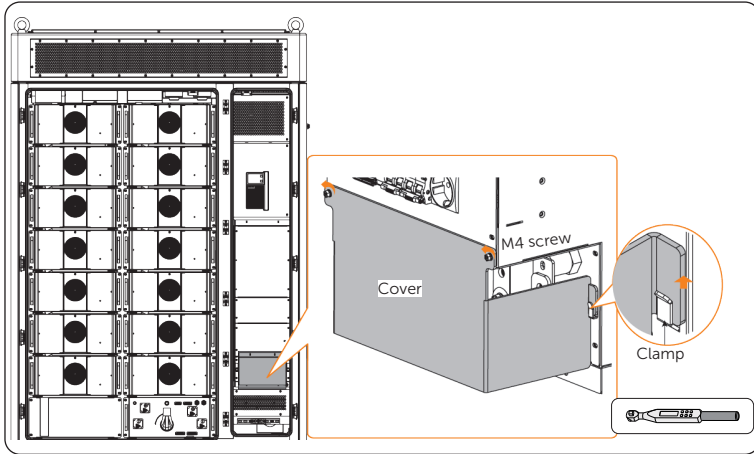


Figure 7-13 Removing the cover

Step 5: Thread the cables into the hole.

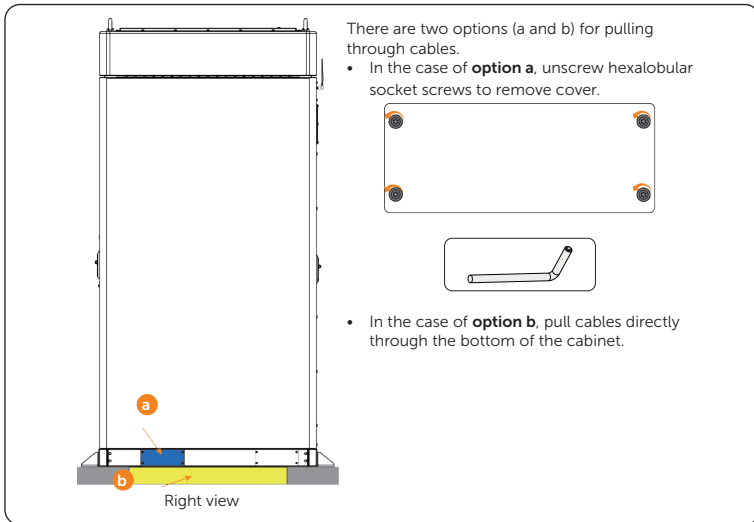


Figure 7-14 Threading cables

Step 6: Thread the grid cables through the clamp,

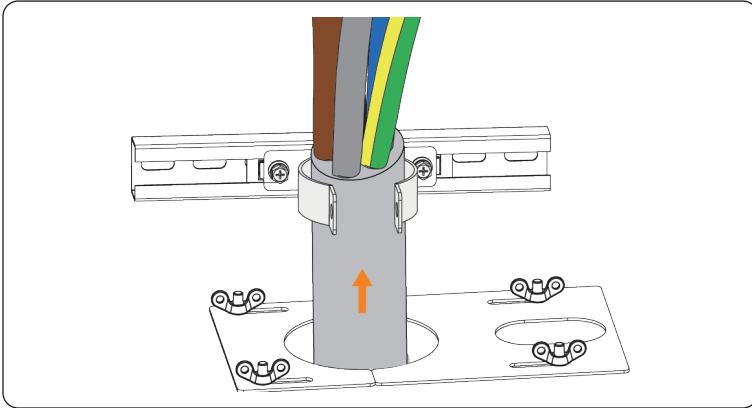


Figure 7-15 Threading cables

Step 7: Insert M8 (part K) or M10 screws to secure and connect the assembled L1/L2/L3/N wires to the cable interface, and then tighten them.

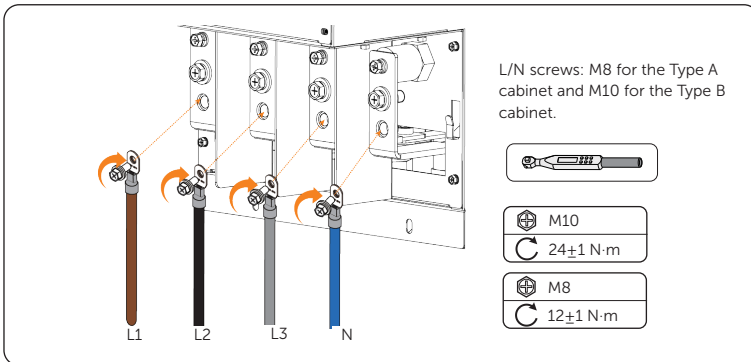


Figure 7-16 Connecting L1, L2, L3 and N wires

NOTICE!

- The screw specification varies depending on the cabinet type. For cabinet type identification, see "2.2.2 Product Type Identification".

Step 8: Insert and tighten M5 and M6 screws, and then fully tighten M5 butterfly nuts.

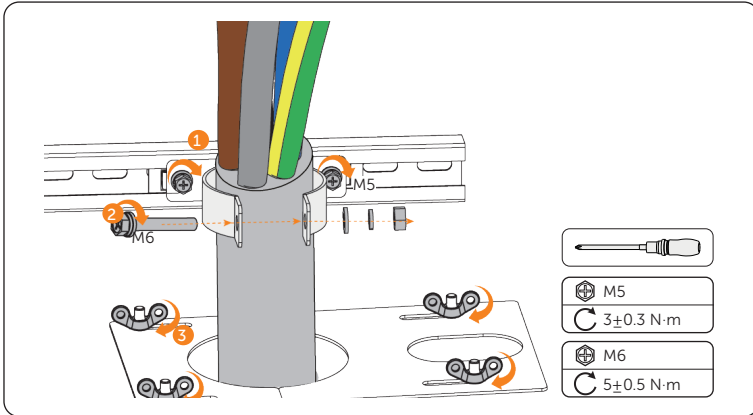


Figure 7-17 Tightening screws

Step 9: Connect the PE wire to the PE point (position 1 or 2) on the PE bar and secure it with the M8 screw.

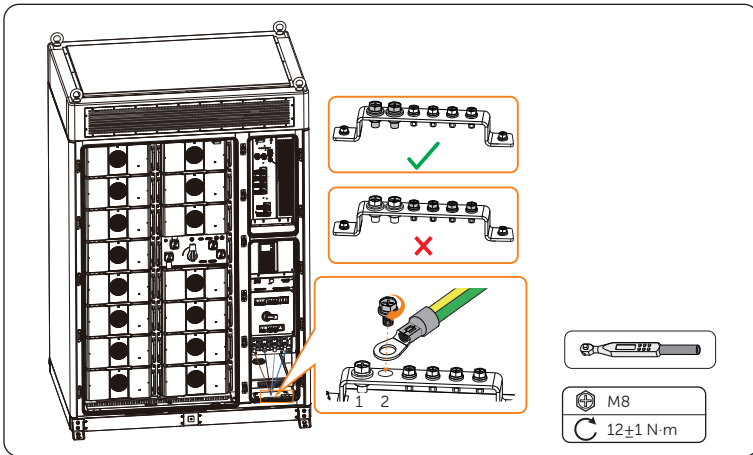


Figure 7-18 Connecting PE wire

Step 10: Reattach the cover to the distribution box, and then correctly insert and tighten M4 screws.

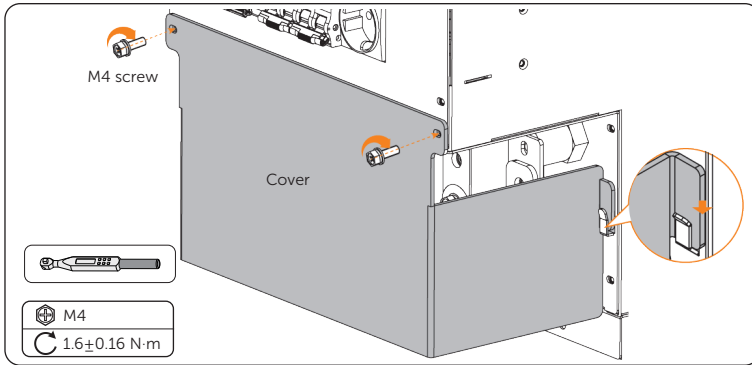


Figure 7-19 Reattaching cover

Step 11: Lay the fireproof mud (Part M) to plug of the hole.

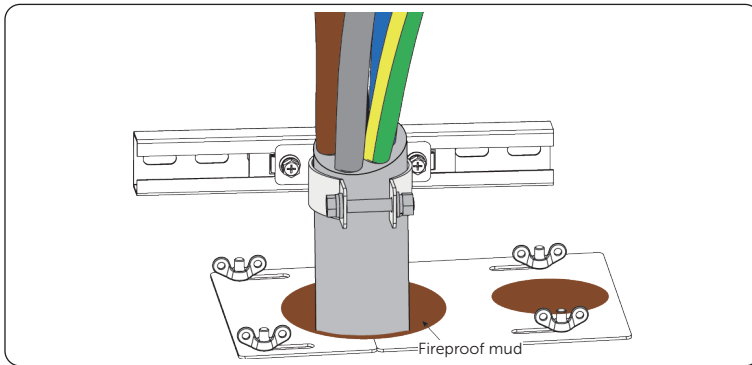


Figure 7-20 Laying fireproof mud

NOTICE!

Notice for fireproofing mud:

- Take out the fireproof mud delivered with the cabinet and knead it into a ball shape. In the case of the low temperature, place it into warm water, of which the temperature range is between 40°C and 70°C, with its package until it is soft.
- Clean the area around the cable threading hole before sealing it.
- The fireproof mud should be evenly spread, embedded, or filled in the cable threading hole. If such a hole is too large, a fireproofing board can be placed to enhance fire protection before using the mud.
- The fireproof mud needs to be cured after sealing the cable threading hole. Prevent water from entering and colliding during curing.

7.3 Network Connection

Connect the EMS to Ethernet so that you can view the system operation details remotely. You can connect the cabinet to network wirelessly via 4G, or via a wired Ethernet connection.

7.3.1 Wireless Connection (4G)

The cabinet offers two antenna ports. The right one is for connecting the 4G antenna stick delivered with the cabinet, and the left one is reserved.

Step 1: Remove the silicone cap.

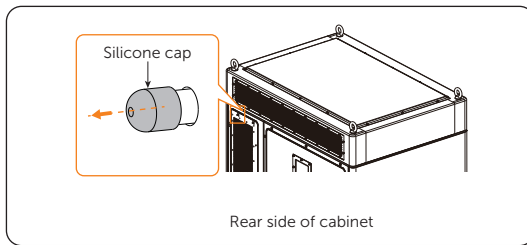


Figure 7-21 Removing silicone cap

Step 2: Correctly insert and tighten the antenna (part N) by turning it clockwise.

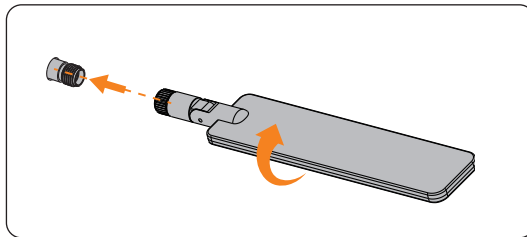


Figure 7-22 Installing antenna

Step 3: Fold the antenna up 90°.

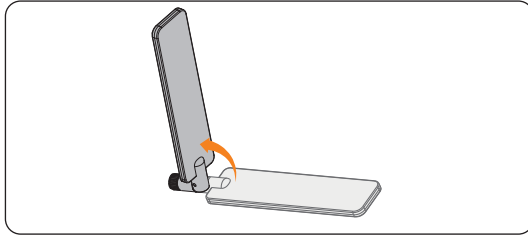


Figure 7-23 Folding the antenna

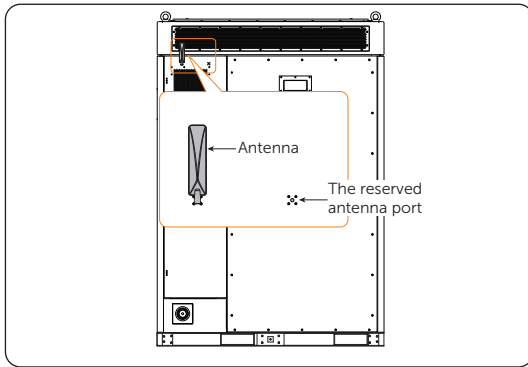


Figure 7-24 Appearance with the antenna installed

Step 4: Insert the Nano-SIM card into the EMS1000 for 4G communication.

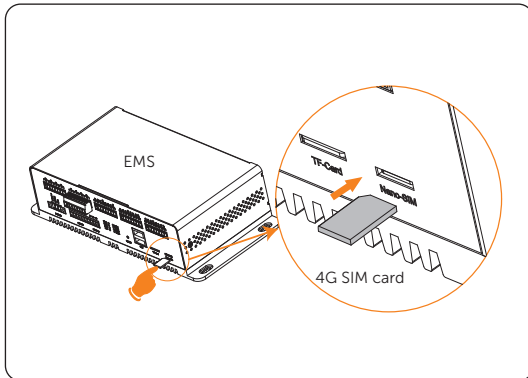


Figure 7-25 Inserting 4G SIM card

7.3.2 Wired Connection (Ethernet)

Step 1: Strip the outer jacket off the network cable to an appropriate length at both ends.

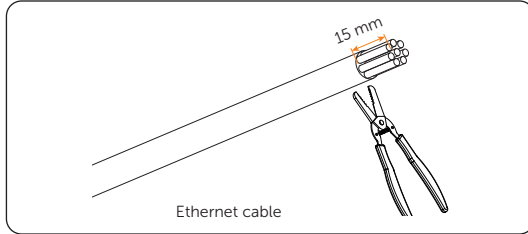


Figure 7-26 Stripping cable jacket

Step 2: Carefully insert the wires all the way into the RJ45 connector, making sure that each wire passes through the appropriate guides inside the connector.

Step 3: Push the RJ45 inside the crimping tool and squeeze the crimper all the way down.

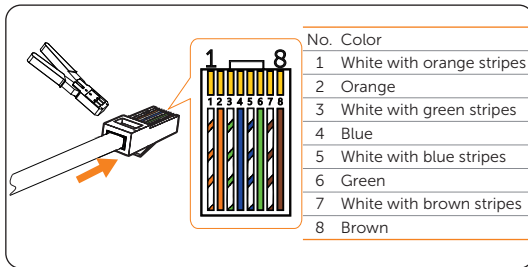


Figure 7-27 Crimping RJ45

Step 4: Use keys to open the rear doors.

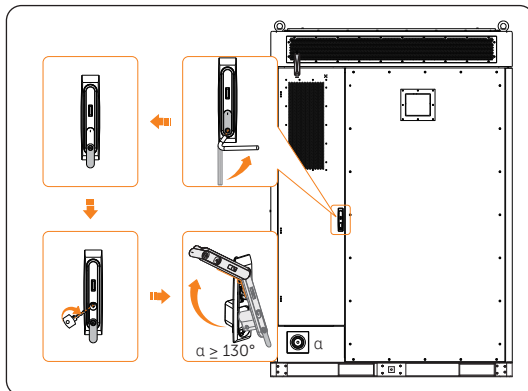


Figure 7-28 Opening the rear door

Step 5: Cut open the seal on the cable entry port at the bottom of the cabinet to thread the Ethernet cable through.

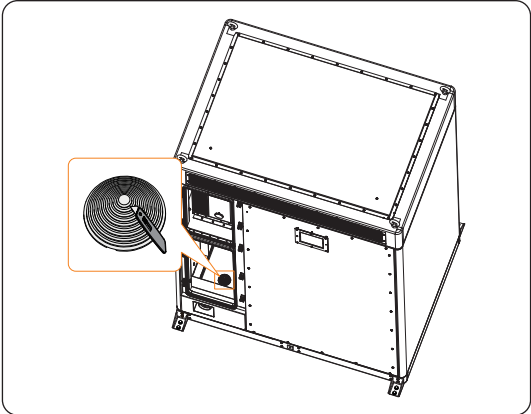


Figure 7-29 Cutting open the seal of cable hole

Step 6: Route the Ethernet cable through the entry port from outside to inside.

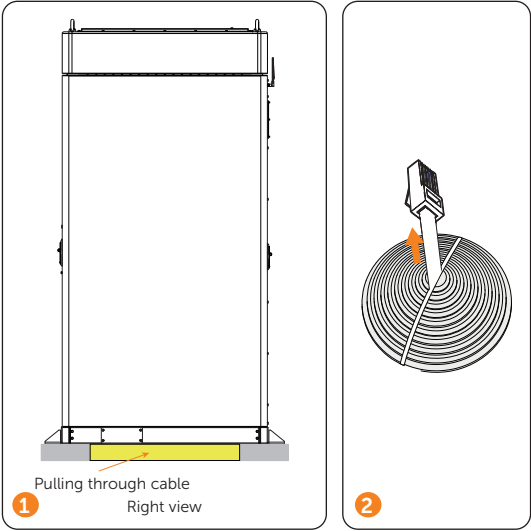


Figure 7-30 Threading the Ethernet cable

Step 7: Connect the EMS to the network.

- a. Insert one end of the network cable connector into **NET4** of the EMS, and the other end of the cable to the router or switch. A click sound will be heard when the connector is properly inserted into the port.
- b. Use cable ties to neatly secure the network cable along the inner side of the cabinet.

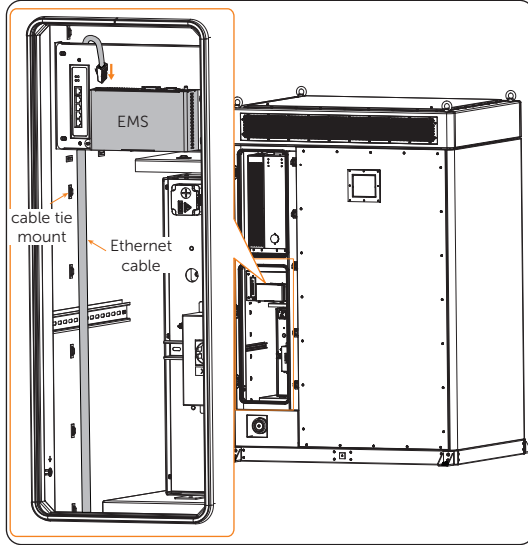


Figure 7-31 Running the Ethernet cable

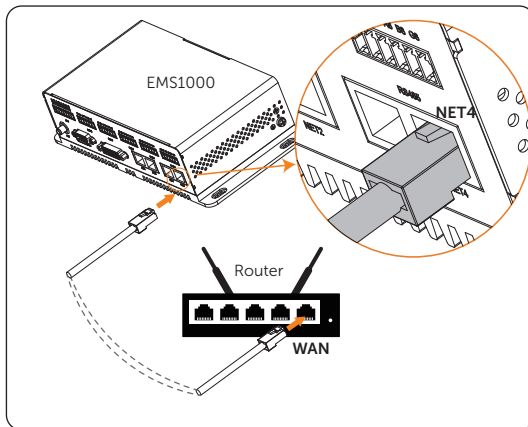


Figure 7-32 Inserting the Ethernet cable into the **NET4** port

NOTICE!

- It is required to clean the materials, such as metal parts, screws, etc., in the cabinet after finishing wiring.
- It is recommended to seal off the gap between foundations after finishing connection.

8 System Power-on

8.1 Check Before Power-on

Ensure that all the cables are properly connected, and that all the electric components are switched off.

Table 8-1 Checklist

No.	Item	Description
1	Equipment appearance	<ul style="list-style-type: none">• Check the equipment is in good condition, with a clean, non-peeling paint, and rust-free surface.• Ensure that the labels on the equipment are clear and easy to read. If it is damaged, the label shall be replaced at once.
2	Cable appearance	<ul style="list-style-type: none">• Check that the cable jacket is in good condition.• Check that the protective pipes are in good condition.
3	Cable connection	<ul style="list-style-type: none">• Check that the cable connection position is consistent with the design principles.• Ensure that the procedure for crimping terminals strictly observe the requirements, and the terminals are securely fastened.• Check that the lables on the both sides of cables are clear, and the direction of both labels is the same.
4	Wiring	<ul style="list-style-type: none">• Ensure that the wiring procedure is consistent with the principle of separation of strong and weak electricity.• Ensure that the cables are neatly places.• Leave a little extra length for adjustments.• Keep cables tidy in the cabinet.• Check if the grid connection voltage meets: L1+N=220/230 V, L2+N=220/230 V, L3+N=220/230 V, L1+L2=380/400 V, L2+L3=380/400 V, L1+L3=380/400 V.
5	Copper bars in the battery pack	<ul style="list-style-type: none">• Check to make sure the copper bars are not deformed.
6	Button/Switch	<ul style="list-style-type: none">• Check the distribution box's switch is OFF.• Check the battery packs' switches are OFF.

8.2 Powering on the System

The position of components for powering on the system are as follows.

NOTICE!

- Before powering on, ensure the emergency stop button is in the closed position.

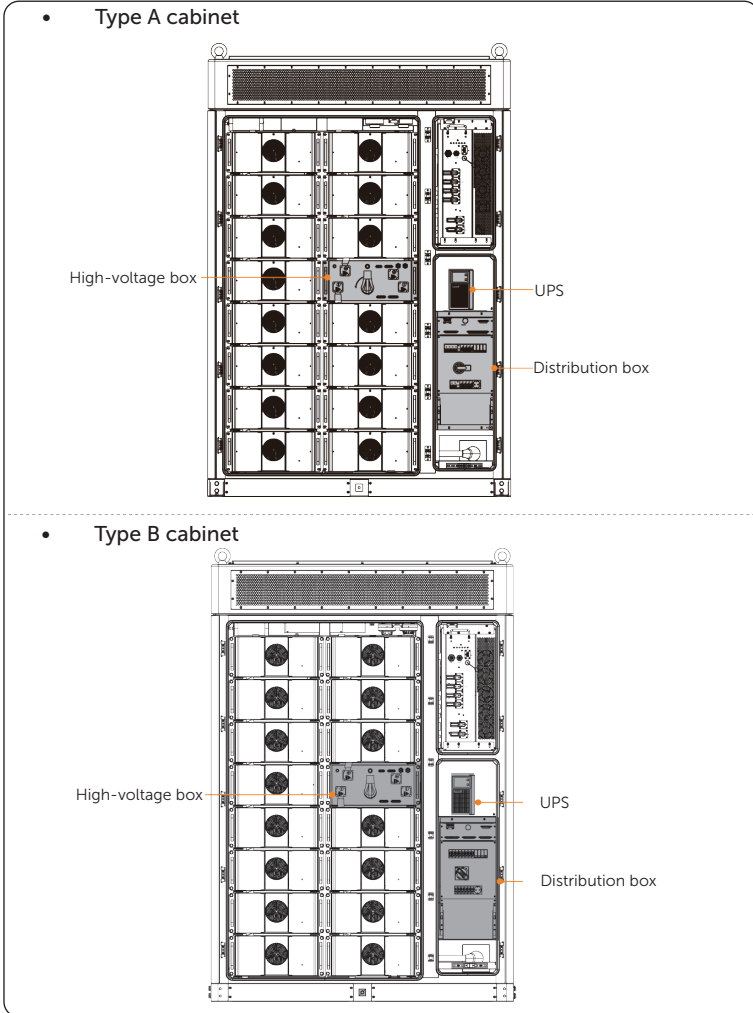


Figure 8-1 Position of modules

Step 1: Open the front doors.

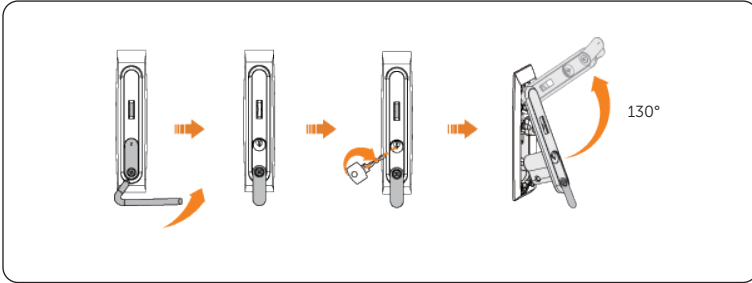


Figure 8-2 Opening the door

Step 2: Start the distribution box.

- a. Rotate the switch on the distribution box 90° clockwise to the **ON** position.
- b. Flip up the **APS1** breaker, **SPD MCB** breaker, **HVAC MCB** breaker, **UPS** breaker, and the **APS2** breaker in sequence.

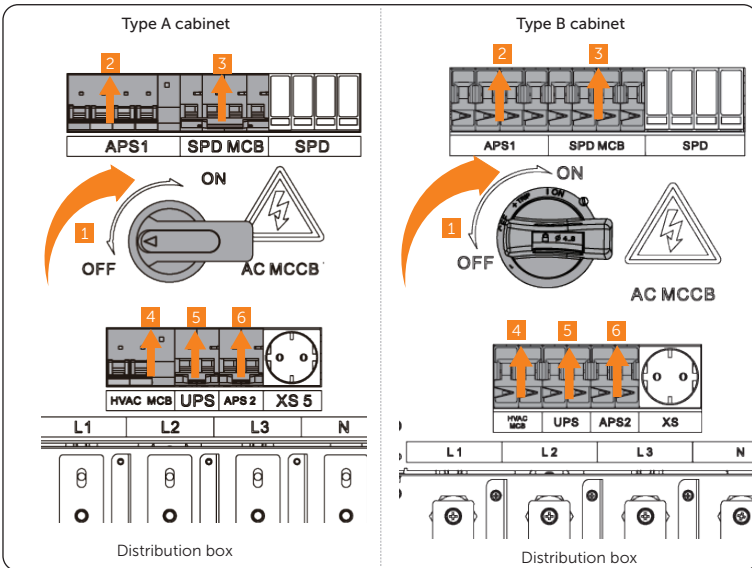


Figure 8-3 Starting sequence of distribution box

Step 3: To start the UPS, hold the power button; you will hear the startup sound.

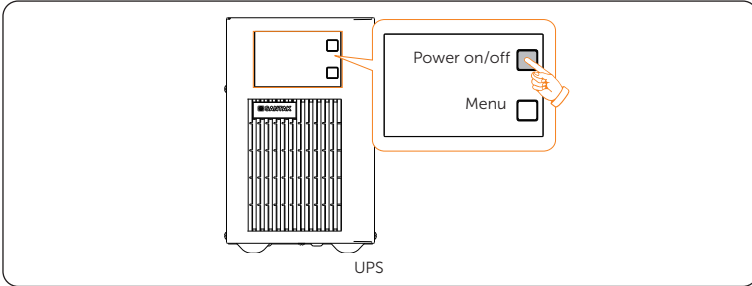


Figure 8-4 Holding and pressing button

Step 4: Rotate the disconnecter of the high-voltage box to **ON**, and then gently press the power button. At the point, the LED light will come on green.

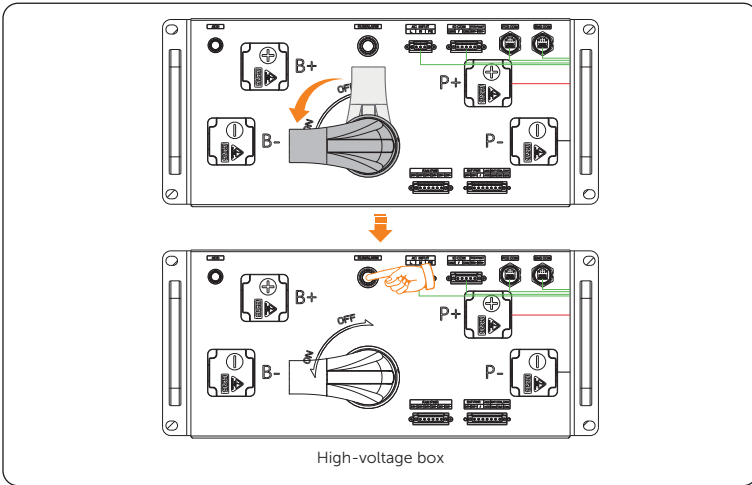


Figure 8-5 Starting the high-voltage box

Step 5: Close the door after the equipment has been started.

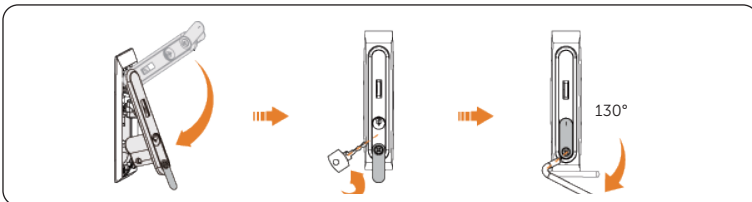


Figure 8-6 Closing the door

9 System Login

Log in to EMS and SolaXCloud for unified management of the system. You can log in to EMS through local screen on the cabinet or EMS webpage, and log in to SolaXCloud for cloud related operations.

NOTICE!

- Due to product updates, the user interface may differ. Please refer to your actual product.

9.1 EMS Setup

Step 1: Gently and correctly guide the key into the keyhole, and then turn it clockwise to unlock the screen door.

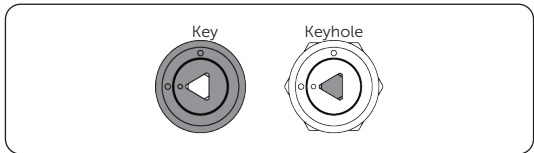


Figure 9-1 Correct position

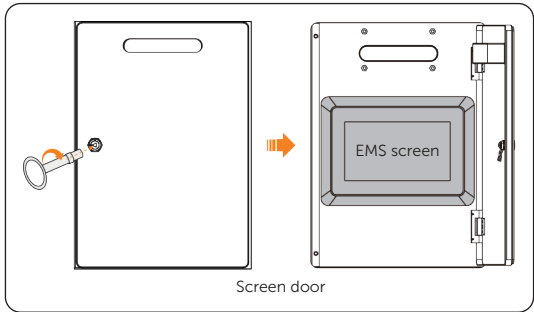


Figure 9-1 Unlocking screen door

Step 2: On the login screen, enter the username and password, and then tap **Login**.

Table 9-1 User account information

Username	Password	Remarks
User	123456 by default	The password can be modified on EMS1000 webpage.

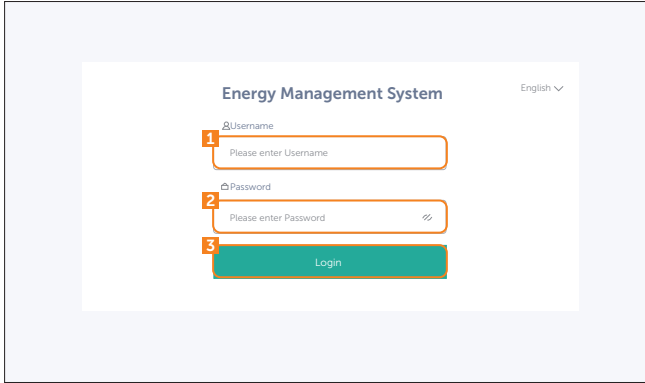


Figure 9-2 Logging in to the screen

Step 3: Tap **Data** to view **EMS Registration No.**, and then tap **Log out**. The EMS Registration No. is a new password.

Table 9-2 Admin account information

Username	Password
Admin	EMS Registration No.

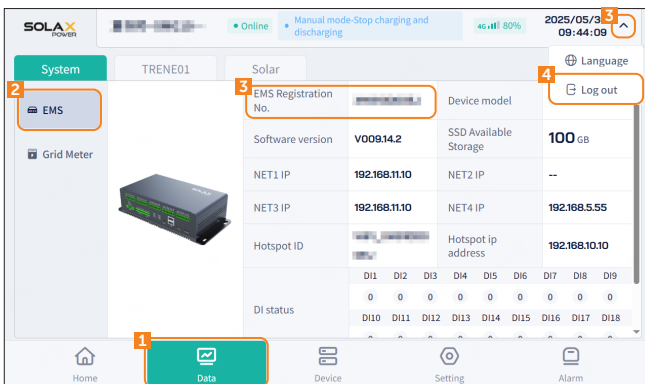


Figure 9-3 EMS registration No.

Step 4: Sign in an admin account from the login page.

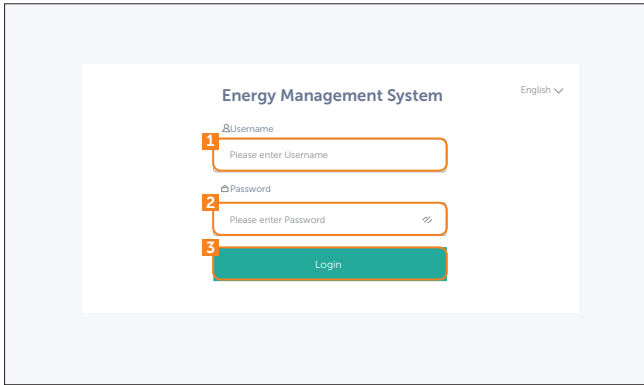


Figure 9-4 Signing in an admin account

NOTICE!

- Please pay attention to the case when entering your password.

Step 5: Tap **Device Pairing**. The inverter, cabinet and related devices will pair automatically, and the pairing result will be displayed.

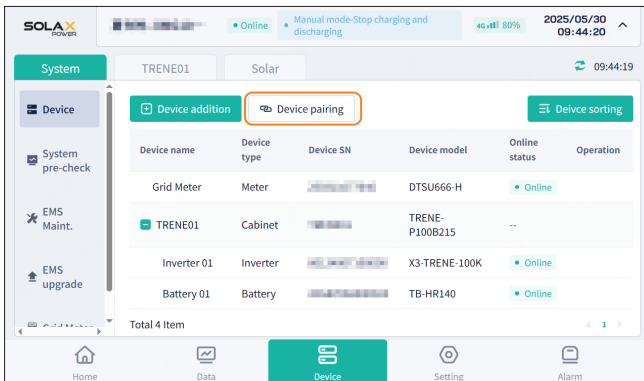


Figure 9-5 Pairing device

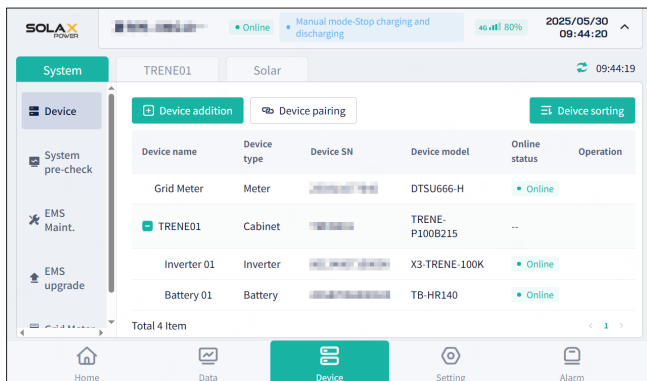


Figure 9-6 Pairing devices successfully

- Step 6:** Tap **Save and Pre-check** to save the pairing results. On the pairing confirmation pop-up, tap **Confirm**. The device list will be refreshed and displayed in architecture.

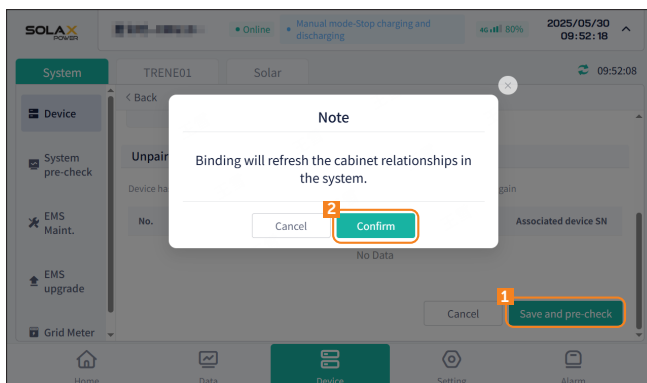


Figure 9-7 Saving and confirming pairing

If it fails to pair the inverter, please check whether the baud rate of the inverter is correct.

Step 1: Tap **Setting**, and then tap **RS-485 Settings**.

Step 2: Select the correct baud rate (19200) in the Line 7, and then tap **Save**.

NOTICE!

- The baud rate of the cabinet connected to the inverter must be consistent with the baud rate of the inverter.

Step 3: You can set the the inverter through the **Remote settings**, the initial password is 2014. For your account security, please change the password after the first setting.

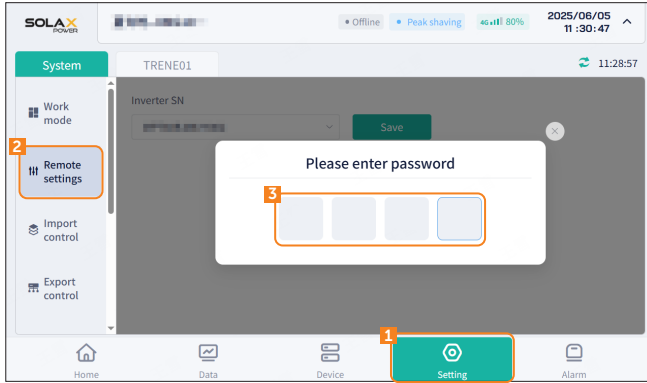


Figure 9-8 Remote settings

9.2 SolaXCloud App Login

- Step 1:** Download and install the app.
- » Scan the QR code below.
 - » Find and scan the QR codes at the button right of the login page of www.solaxcloud.com.
 - » Search with the key word SolaXCloud on the App Store or Google Play.



Figure 9-9 QR code

- Step 2:** On the login page, enter your username and password. Check the boxes to agree to the privacy policy and terms of use. Tap **Login** to complete the app login. You can directly contact the SolaX to obtain your login credentials.

Welcome!

👁

Remember me Forgot password?

Log in means that you have read, understood and agreed to the [Privacy Policy](#) and [Terms of Use](#)

Figure 9-10 Login page

10 Troubleshooting and Maintenance

10.1 Power-off

The system supports normal power-off and emergency power-off.



- Check whether the system is still running before power off. Do not power off if the device is under load.
- After the system is powered off, residual power and heat may remain and can cause, electric shock or burns. Always wear the required PPE and begin maintenance at least 15 minutes after the power is disconnected.

Normal power-off

Step 1: Open the door.

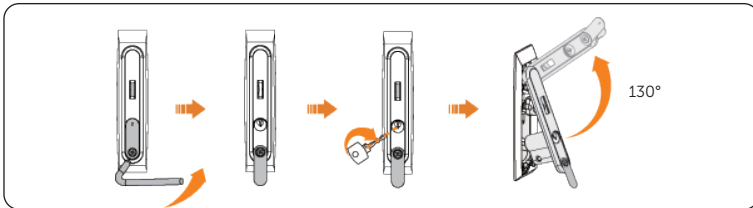


Figure 10-11 Opening the door

Step 2: Press the power button, and rotate the disconnecter of the high-voltage box to **OFF** position.

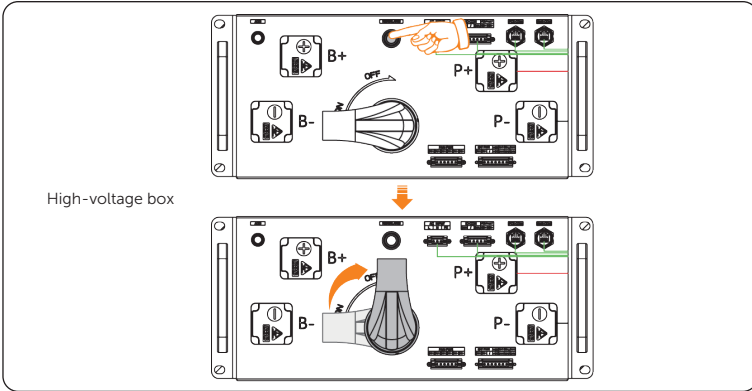


Figure 10-12 Shutting down the high-voltage box

Step 3: Shut down the distribution box.

- a. Flip down the **APS2** breaker, **UPS** breaker, **HVAC MCB** breaker, **SPD MCB** breaker, and **APS1** breaker.
- b. Rotate the switch on the distribution box 90° anti-clockwise to the **OFF** position.

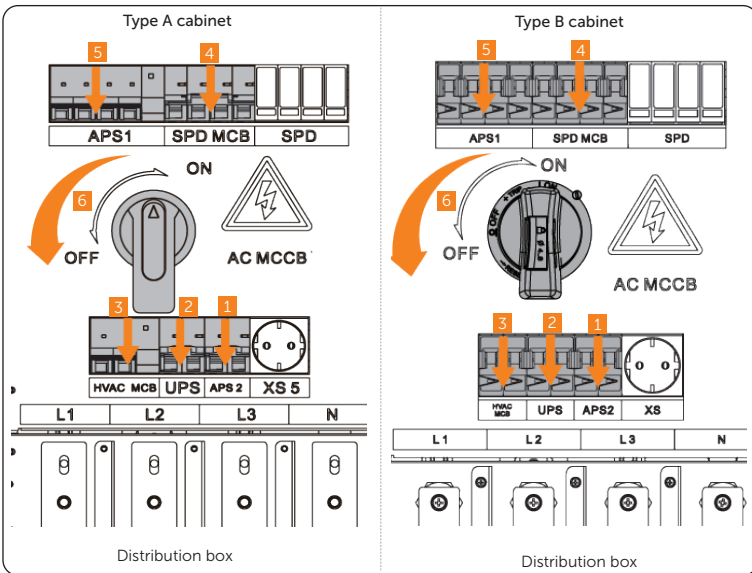


Figure 10-13 Shutting down sequence of distribution box

Step 4: Hold and press the power button to power off the UPS.

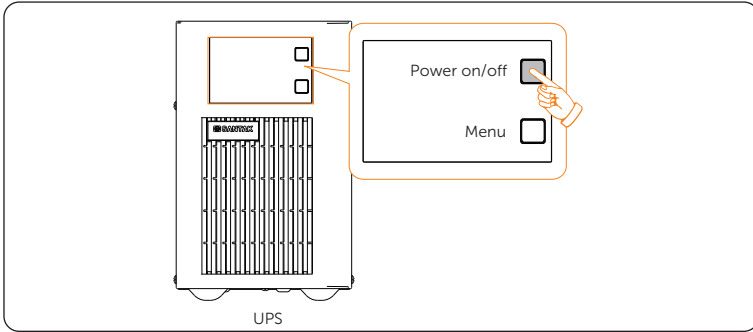


Figure 10-14 Holding and pressing button

Emergency power-off

WARNING!

- Do not press the emergency stop button except for emergencies.
- Some modules inside the cabinet may still have power after pressing the emergency stop button, therefore, non-professionals are not allowed to operate them.

Step 1: Rotate the cover

Step 2: Press the emergency stop button.

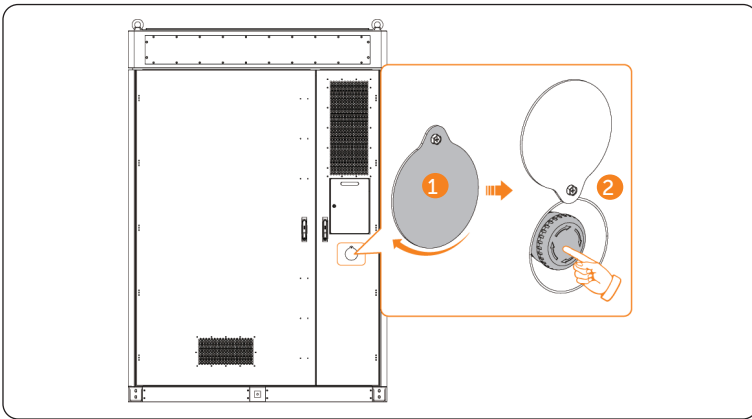


Figure 10-15 Pressing emergency stop button

NOTICE!

If it has been pressed, the emergency stop button must be reset before starting the equipment. The reset steps are shown as follows:

- Rotate the cover;
- Rotate the button according to the arrow direction shown on the button. Then the button will spring back to its original position.

10.2 Troubleshooting

This section lists the possible problems with the equipment, and provides information and procedures for identifying and resolving them. In case of any errors, check for the warnings or error messages on the system control panel or App, and then refer to the suggestions below. For further assistance, contact SolaX Customer Service. Please provide the model and SN of the cabinet, and be prepared to describe the system installation details.

Table 10-1 Troubleshooting list

Facult	Description and Diagnosis
UCellHi_4	<p>Single Cell Overvoltage Category IV</p> <ul style="list-style-type: none"> Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds. Or contact SolaX for help.
UCellHi_5	<p>Single Cell Overvoltage Category V</p> <ul style="list-style-type: none"> Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. Or contact SolaX for help.
UCellLow_4	<p>Single Cell Undervoltage Category IV</p> <ul style="list-style-type: none"> Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds. Or contact SolaX for help.
UCellLow_5	<p>Single Cell Undervoltage Category V</p> <ul style="list-style-type: none"> Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds. Or contact SolaX for help.
UCellDiff	<p>Voltage difference fault</p> <ul style="list-style-type: none"> Or contact SolaX for help.
HVBOver_4	<p>Overvoltage category IV of total voltage</p> <ul style="list-style-type: none"> The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds. Or contact SolaX for help.

Fault	Description and Diagnosis
HVBOVer_5	<p>Overvoltage category V of total voltage</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
HVBLow	<p>Undervoltage category IV of total voltage</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
HVBLow	<p>Undervoltage category V of total voltage</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
PosRlyAdh	<p>Sticking contacts of main positive relay</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
PosRlyOpen	<p>Open circuit of main positive relay</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
TempHigh	<p>Overtemperature fault</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
TLineFlt_1	<p>Temperature sampling fault level 1</p> <ul style="list-style-type: none"> • Check if the temperature sensor is short-circuited. • Or contact SolaX for help.
TLineFlt_4	<p>Temperature sampling fault level 4</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds. • Or contact SolaX for help.

Facult	Description and Diagnosis
TempLow	Low-temperature fault <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
DsgOver_4	Discharge overcurrent fault level 4 <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds.• Or contact SolaX for help.
DsgOver_5	Discharge overcurrent fault level 5 <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
ChgOver_4	Charge overcurrent fault level 4 <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds.• Or contact SolaX for help.
ChgOver_5	Charge overcurrent fault level 5 <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
ICOMFault	Internal communication fault <ul style="list-style-type: none">• Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
OCOMFault	External communication fault <ul style="list-style-type: none">• Do not power on, and the charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
MCOMFault	Intermediate network communication fault <ul style="list-style-type: none">• Do not power on, and the charging current is limited to 0 A.• Or contact SolaX for help.

Facult	Description and Diagnosis
UCellLineOpenFlt	<p>Voltage sampling fault</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
VoltSensorFlt	<p>Voltage sensor fault</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
CurrSensorFlt	<p>Current sensor fault</p> <ul style="list-style-type: none"> • Contact SolaX for help.
NegRlyAdh	<p>Sticking contacts of main negative relay</p> <ul style="list-style-type: none"> • Restart the device. • Or contact SolaX for help.
NegRlyOpen	<p>Open circuit of main negative relay</p> <ul style="list-style-type: none"> • Restart the device. • Or contact SolaX for help.
FlashFlt	<p>Flash fault</p> <ul style="list-style-type: none"> • Check if the external Flash communication is normal. • Or contact SolaX for help.
ChgReqFlt	<p>Charging request fault</p> <ul style="list-style-type: none"> • Check the device is properly charged. • Or contact SolaX for help.
InsFlt	<p>Insulation fault</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.
SOCLowFlt	<p>Low SOC</p> <ul style="list-style-type: none"> • Check if the device is running out of power. • Or contact SolaX for help.
PreChgFailFlt	<p>External short-circuit fault</p> <ul style="list-style-type: none"> • The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second. • Or contact SolaX for help.

Facult	Description and Diagnosis
AFEProtectFlt	Battery's hardware protection fault <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
SelfCheckFlt	Self-test fault <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 1 second.• Or contact SolaX for help.
LinkerTempHilFlt_3	Fault on overtemperature of high-voltage connector <ul style="list-style-type: none">• Check whether the charge/discharge current is over 50% of rated charge/discharge current.• Or contact SolaX for help.
LinkerTempHilFlt_5	Fault on overtemperature of high-voltage connector <ul style="list-style-type: none">• Check whether the charge/discharge current is over 50% of rated charge/discharge current.• Or contact SolaX for help.
BatLinkerTempHi_5	High-temperature fault of pole <ul style="list-style-type: none">• The charging current is limited to 0 A. If the relay does not receive a power-off instruction from the PCS, it will be turned off forcefully after 3 seconds.• Or contact SolaX for help.
FanFault	Fan fault <ul style="list-style-type: none">• Check whether any foreign objects stick to the fan.• Contact SolaX for help.
FuseSt	Fuse fault <ul style="list-style-type: none">• Contact SolaX for help.
DCSwitch	DC switch fault <ul style="list-style-type: none">• Contact SolaX for help.

10.3 Maintenance

Regular maintenance is required for the device. The table below lists the operational maintenance for expressing the optimum device performance. More frequent maintenance service is needed in the worse work environment. Please make records of the maintenance.



WARNING!

- Only qualified person can perform the maintenance for the device.
- Only use the spare parts and accessories approved by SolaX for maintenance.

10.3.1 Maintenance Routine

Table 10-1 Maintenance list

Check Item	Description	Interval Time
The operating status and environment of the system	<ul style="list-style-type: none"> • Check whether there is any damage to the distributed energy system, and the equipment is deformed. • Check whether there are any abnormal noise in the running system. • Check whether the parameter is correct shown in the screen. • Check whether there is any damage to the main components. • Check whether the temperature of the equipment shell is normal. Meanwhile, it is suggested to use a thermal imager or any other monitoring systems to identify signs of heat. • Check whether the surrounding is at normal humidity level, and there is any damage to the dust and air filters. <ol style="list-style-type: none"> a. Must ensure that the air intake is well ventilated. Otherwise, the battery pack failure will be caused due to overheating. b. Please gently open the door to prevent raising dust from the filter cotton. Otherwise, the smoke detector will alarm and give a command to the automatic fire sprinkler to spray gas. 	Every 1 year

Check Item	Description	Interval Time
System cleaning	<ul style="list-style-type: none"> Check whether the circuit boards and components are clean. If necessary, clean the modules by air compressor. <p>Note: 1. The system must be shut down before cleaning. 2. The maintenance period shall be shortened if the cabinet is installed in heavily polluted environments.</p>	Every 1 year
Electrical connection	<ul style="list-style-type: none"> Check whether the power cables are fastened securely. If not, please tighten them again according to the torque written in the document. Check there is any damage to the cables, especially the cable jacket connecting with the metal parts. Check whether the electrical insulation tape is in good condition and no peeling. 	The check shall be scheduled within one month after the first commissioning, and then can be scheduled every 1 year
Terminal and block connection	<ul style="list-style-type: none"> Check whether the screws are fastened securely. If not, please tighten them again according to the torque written in the document. Check whether there is any fading to the screws and copper bars. Check whether the wiring arrangement is reasonable. Check whether the loop terminals are in good condition, and the temperature of the screws is normal. 	The check shall be scheduled within one month after the first commissioning, and then can be scheduled every 1 year
Relay maintenance	<ul style="list-style-type: none"> Do a routine inspection for the corrosion of all metal components. Do an annual inspection for the connectors (auxiliary switches and microswitches) to make sure that the equipment is in good running condition. Check whether the parameter is correct (especially the voltage and insulation). 	Every 1 year
Aerosol inspection	<ul style="list-style-type: none"> Check whether the aerosol is in good condition, and wiring are fastened securely. 	Every 1 year
Safety function	<ul style="list-style-type: none"> Check whether the emergency stop button and LED is in good working condition. Check the stopping signal and communication by simulating the shutdown operation. Check whether there are any damages to warning signs and other labels pasted on the equipment. If so, please replace them in time. 	Every 1 year

10.3.2 Disassembly and Clean of Air Conditioner Filter

WARNING!

- The air conditioner must be powered off before disassembly and clean of air conditioner.
- The device may still have power and heat after turning off, which may cause electric shock and personal injuries. Therefore, please allow it to cool for at least 5 minutes and wear PPE before conducting maintenance.

Step 1: Unscrew M6 screws, and orderly dismantle aluminum mesh plate, and black filter.

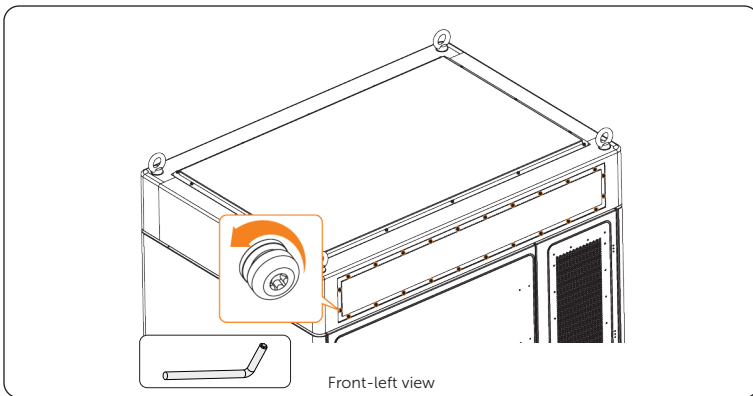


Figure 10-16 Unscrewing M6 screws

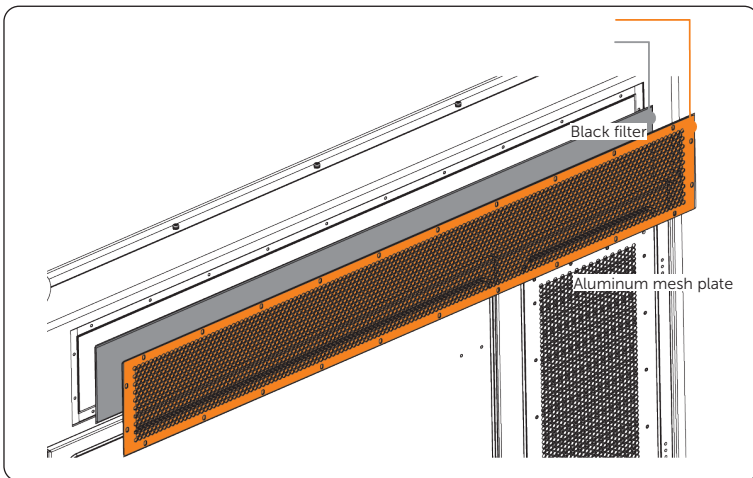


Figure 10-17 Dismantling

Step 2: Clean aluminum mesh plate, and replace the black filter.

Step 3: Orderly reinstall the black filter, and aluminum mesh plate.

Step 4: Insert and tighten M6 screws (x 24).

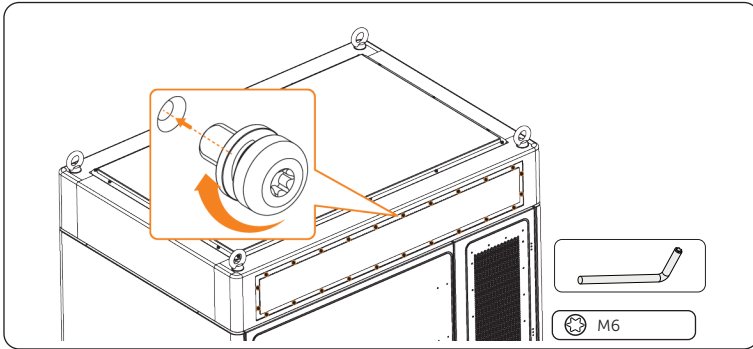


Figure 10-18 Tightening M6 screws

10.3.3 Maintenance of Battery Pack

Circumstance	Measure
If the ambient temperature for storage is between 30°C and 50°C	Recharge the battery packs at least once every 6 months
If the ambient temperature for storage is between -20°C and 30°C	Recharge the battery packs at least once every 12 months.
In the first installation	The interval among manufacture dates of battery packs shall not be exceed 3 months.
If a battery pack is replaced or added for capacity expansion	Each battery's SOC should be consistent. The max. SOC difference should be $\pm 5\%$.
If users want to increase their battery system capacity	Ensure that the SOC of the existing system capacity is about 40%. The manufacture date of the new battery pack shall not exceed 6 months. If the manufacture date of the new one exceeds 6 months, please charge it to around 40%.

⚠ WARNING!

- Only qualified person can perform the maintenance for the device.

11 Dispose of Wasted and Damaged Battery Pack

Please dispose of the rechargeable battery or accessories in accordance with the disposal regulations for electronic waste which is applied at the installation site.

NOTICE!

- The expenses for dispose of the wasted or damaged battery packs incurred shall be borne by the user.

12 Technical Data

12.1 TRENE-P100B215

Cabinet (AC side)

Model	TRENE-P100B215
Rated AC power [kW]	100
Rated AC current [A]	144.4
Max. AC apparent power [kVA]	110
Nominal grid voltage [V]	400 (-20% to +15%)
Nominal grid frequency [Hz]	50/60
Adjustable power factor range	0.99 leading – 0.99 lagging
THDi (Rated power) [%]	< 3
Max. efficiency [%]	98%
DC side anticipated short circuit current [A]	8500
AC side anticipated short circuit current [A]	8500
AC transient short-circuit current [A]	<350 (Duration: 4 ms)

Battery specifications

Model	TRENE-P100B215
Battery type	LFP
Battery capacity [kWh]	215
Rated battery voltage [V]	768
Battery voltage range [V]	600 – 876
Discharge depth [%]	90
Rated charge/discharge current [A]	140

General specifications

Model	TRENE-P100B215
Dimension (WxHxD) [mm]	1680 × 2420 × 1200
Weight [kg]	2800
Operating temperature range [°C]	-30 to 50
Relative humidity (Non-condensing) [%]	0 to 95
Altitude [m]	3000
Cooling concept	Smart air cooling
Ingress protection	IP55
Fire protection	Aerosol (Optional: Novec1230)/Water
Topology	Non-isolated
Certificates	IEC62619, IEC63056:2000, IEC61000, IEC62477-1, UN38.3, GB/T36276, GB/T34131

12.2 TRENE-B215

Product Name	TRENE-B215
Battery Designation	IFpP74/175/208[(16S)15S]M/-30+50/95
Battery Type	LFP
Cell Manufacturer	A
Rated Capacity [Ah]	280
Rated Energy [kWh]	215
Rated AC Power [kW]	100
Rated AC Voltage [V]	3/N/PE, 230/400
Rated Grid Frequency [Hz]	50/60
DC Voltage Range [d.c.V]	650 ~ 876
AC Voltage Range [a.c.V]	340 ~ 440
Rated DC Voltage [d.c.V]	768
Max. Charge/Discharge Current [A]	140
Conditional Short-circuit Current (I _{cc}) [A]	< 10000
Output Short-circuit Current [A]	4500 (Duration: 1.3 ms)
Charge Temperature [°C]	0 to 50
Discharge Temperature [°C]	-20 to 50
Storage Temperature [°C]	50 ~ 60 (3 months); 30 ~ 50 (6 months); -20 ~ 30 (12 months)
Altitude [m]	< 3000
Ingress Protection	IP55
Protection Class	I
Certificates	IEC 62619, IEC 63056

13 Appendix

13.1 Installation Video

A QR code for the installation video is on the front of the cabinet. Simply scan it with your phone (iOS or Android) to watch the video.

NOTICE!

The installation video is provided for reference only, and might be updated as needed. Please install the cabinet following the installation manual and local regulations.



Figure 13-1 Scanning to view the installation video

13.2 Requirements for OT/DT Terminal

For different types of cables, select proper terminals and additional components for connection.

CAUTION!

- Do not connect the aluminum wiring terminal directly to the terminal block or copper bar in case of electrochemical corrosion, which might affect the reliability of cable connection.

NOTICE!

- The copper–aluminum bimetallic terminal used in scenario 3 must comply with the requirements in IEC61238-1.


Table 13-1 Terminal requirements for different types of cables

Scenario	Cable Type	Wiring Terminal Type	Figure Illustration
1	Copper cable	Copper wiring terminal	
2	Copper-clad aluminum cable	Copper wiring terminal	
3	Aluminum alloy cable	Copper–aluminum bimetallic terminal	

13.3 How to Repaint the Cabinet

Check the paint damage on the surface of the cabinet, with details below:

- For light scratches or small areas of stubborn stains, please see "13.3.1 Light Scratches & Small Areas of Stubborn Stains" to treat them.
- If the deep scratches or large areas of stubborn stains can be treated by users, please refer to "13.3.2 Deep Scratches and Large Areas of Stubborn Stains".
- If the damaged area is too large and cannot be treated, please contact the after-sale personnel for assistance.

 **WARNING!**

- If the cabinet is installed outdoors without shield, do not repaint it in rainy, snowy, windy, or stormy days.

NOTICE!

- Use paint of pantone11-4202TPG color.
- For light scratches and small areas of stubborn stains, spray paint and hairbrush are recommended.
- For deep scratches or large areas of stubborn stains, oil paint and paint sprayer are recommended.

13.3.1 Light Scratches & Small Areas of Stubborn Stains

This solution applies to light scratches without reaching the steel substrate and stubborn stains on the surface.

Tools and materials required

Prepare tools and enough materials according to actual conditions.

Table 13-2 Tools and materials

No.	Tool/Material	No.	Tool/Material
1	Spray/oil paint	2	Fine sandpaper
3	Anhydrous ethanol	4	Cotton cloth
5	Hairbrush (for small scratched area)	6	Spray paint (if there is a large area of light scratch, paint sprayer is recommended.)

Repainting procedure

Step 1: Gently sand the scratched area with a fine sandpaper to remove rust and stains on the surface.

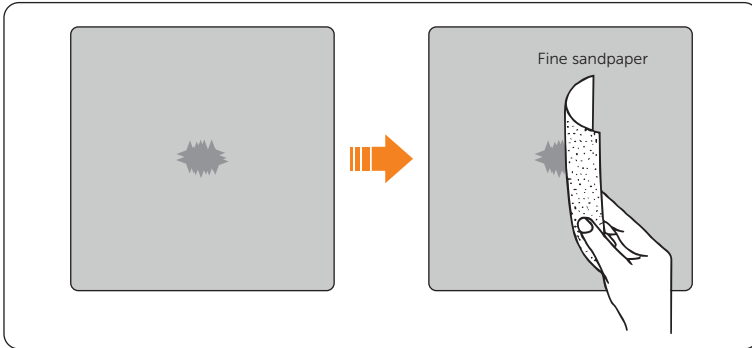


Figure 13-1 Sanding the scratched area

Step 2: Moisten a cotton cloth with anhydrous ethanol, wipe the scratched area with it to remove dust and dirt, and then use a dry cotton cloth to wipe the area dry.

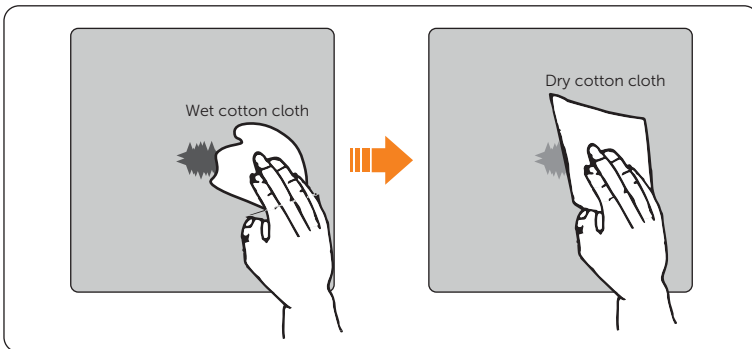


Figure 13-2 Cleaning the scratched area

Step 3: Use hairbrush or spray paint to apply paint to the surface of the scratched area until it is fully and evenly covered.

NOTICE!

- While applying paint, make sure the newly applied paint is thin and even, so that the scratched area can appear consistent and smooth on the surface.
- If there is color difference between the scratched area and the surroundings, cover the surrounding area with tape or paper in case of color contamination.

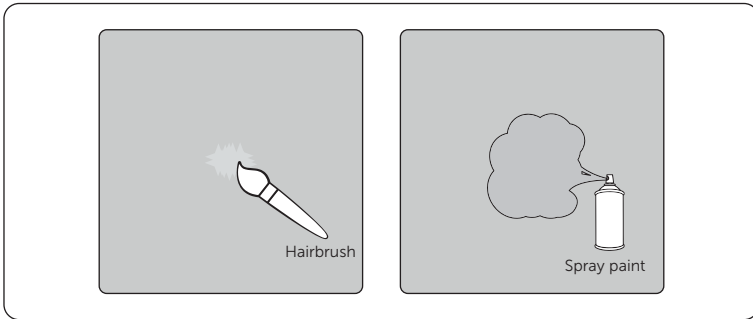


Figure 13-3 Applying paint

Step 4: After completing applying the paint, wait for around 30 minutes for the paint to get dry, and then check whether the repaired area meets the requirements.

NOTICE!

- The color of the repaired area shall be consistent with the surrounding area.
 - » Use a colorimeter to measure the color difference, of which Delta E shall be ≤ 3 .
 - » If the color cannot be measured by a colorimeter, make sure that there is no obvious color difference at the edges between the repaired area and the surrounding area, as well as no bumps, scratches, flakings, or breaks.
- For spray painting, we recommend painting for at least 3 times before pausing to check the effect, and then repeat spray painting and observing until it meets the requirements.

13.3.2 Deep Scratches and Large Areas of Stubborn Stains

This solution applies to deep scratches where the primer has been damaged and reach the steel substrate.

Tools and materials required

Prepare tools and enough materials according to actual conditions.

Table 13-3 Tools and materials

No.	Tool/Material	No.	Tool/Material
1	Spray/oil paint	2	Zinc-rich primer
3	Fine sandpaper	4	Anhydrous ethanol
5	Cotton cloth	6	Hairbrush (for small areas of deep scratches and stubborn stains)
7	Paint sprayer (for large areas of deep scratches and stubborn stains)		

Repainting procedure

Step 1: Gently sand the scratched area with a fine sandpaper to remove rust and stains on the surface.

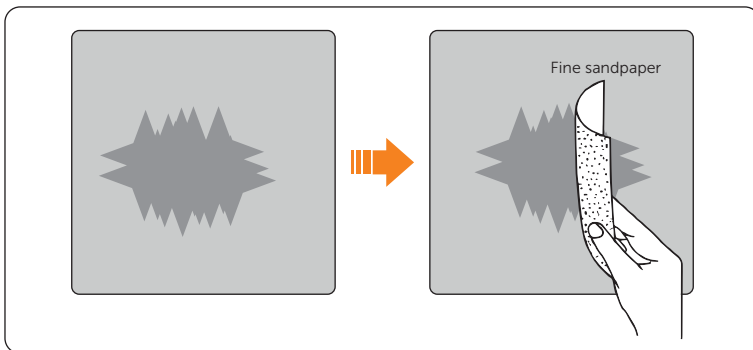


Figure 13-4 Sanding the scratched area

Step 2: Moisten a cotton cloth with anhydrous ethanol, wipe the scratched area with it to remove dust and dirt, and then use a dry cotton cloth to wipe the area dry.

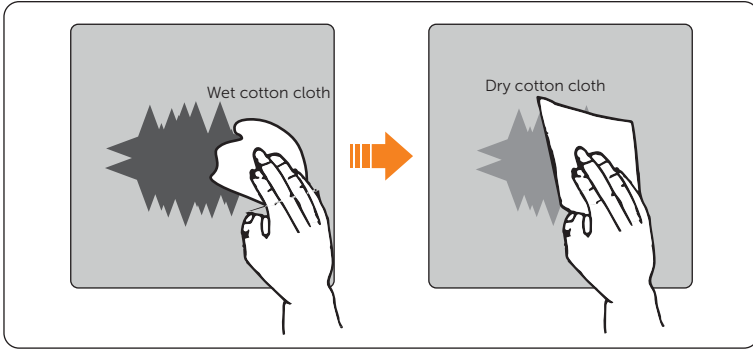


Figure 13-5 Cleaning the scratched area

Step 3: Use a paint spray to apply the zinc-rich primer to the scratched area.

NOTICE!

- If the steel substrate is visible on the scratched area, the zinc-rich primer must be applied first to entirely cover the substrate.
- Wait for the primer to get dry before applying the top coat to the scratched area.

Step 4: Use a paint spray to apply paint to the surface of the scratched area until it is fully and evenly covered.

NOTICE!

- While applying paint, make sure the newly applied paint is thin and even, so that the scratched can appear consistent and smooth on the surface.
- If there is color different between the scratched area and the surroundings, cover the surrounding area with tape or paper in case of color contamination.

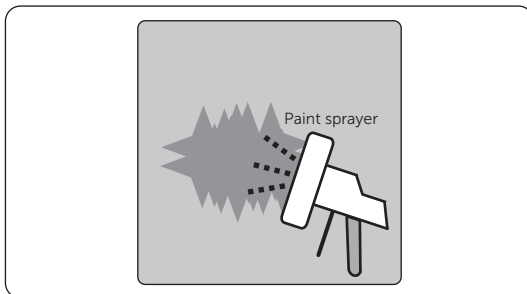


Figure 13-6 Applying paint

Step 5: After completing applying the paint, wait for around 30 minutes for the paint to get dry, and then check whether the repaired area meets the requirements.

NOTICE!

- The color of the repaired area shall be consistent with the surrounding area.
 - » Use a colorimeter to measure the color difference, of which Delta E shall be ≤ 3 .
 - » If the color cannot be measured by a colorimeter, make sure that there is no obvious color difference at the edges between the repaired area and the surrounding area, as well as no bumps, scratches, flakings, or breaks.
- For spray painting, we recommend painting for at least 3 times before pausing to check the effect, and then repeat spray painting and observing until it meets the requirements.

13.3.3 Logo & Pattern Damaged, Dents or Dings

In this case, we recommend contacting a local spray painting company for customized treatment based on the actual conditions.

Table 13-4 Damage extent and recommended solution

No.	Damaged Area	Recommended Solution
1	<ul style="list-style-type: none"> • Size < 100 mm² • depth < 3 mm 	Use a poly-putty base to fix the dents and dings first, and then deal with them according to " Repainting procedure " for Deep Scratches.
2	<ul style="list-style-type: none"> • Size > 100 mm² • depth > 3 mm 	Contact local supplier to make a plan for repair.



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