

Technical Instruction

Communication Cabinet

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Rev. A00

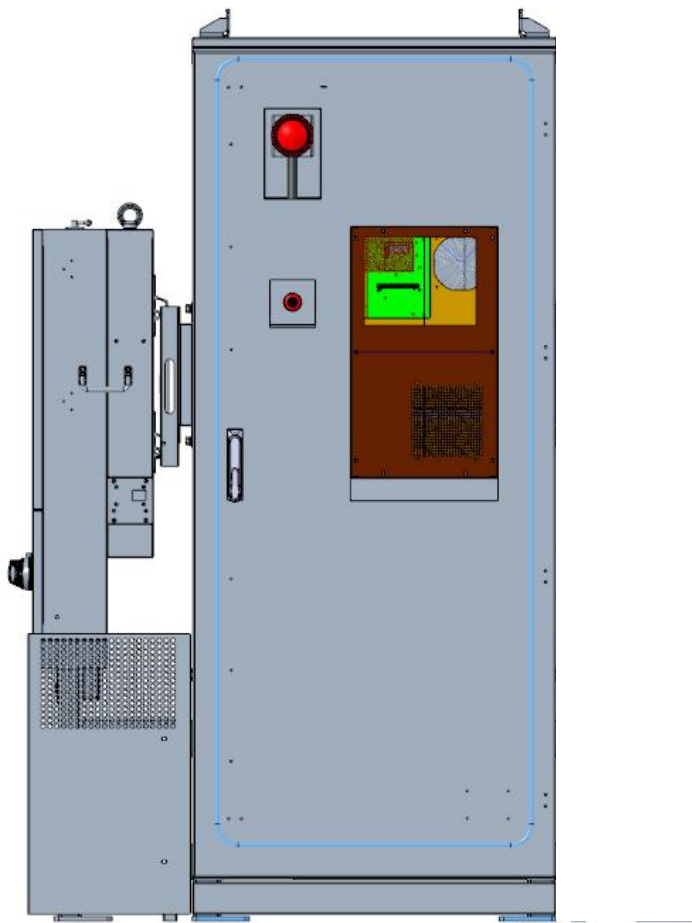
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1. ABOUT THIS DOCUMENT

This document is valid for the installation of Communication Cabinet (Sunnic part number 10500520) on site.



2. MAIN PARAMETER OF COMMUNICATION CABINET

2.1 AC auxiliary Room

Rated input voltage range: 400Vac 50/60Hz (3P+N+PE)

Rated input current range: 0-63A

Rated output voltage range: 0-230Vac 50/60Hz

Rated output current range: 17.5A

Max. number of output circuits: 2 chllier+2 switchgear

Ambient Humidity: 0-95%, no condensation

Ambient Temperature Range: -25~45°C

Heat dissipation way: Air condition cooling

2.2 Other parameter

Enclosure type: NEMA 3R / IP54

Net dimensions: WxHxD 800x1940x800 mm

Max dimensions: WxHxD 800x2000x820 mm (with lifting ears and lock)

Weight: Max~500kg

Noise: < 60dBA@1m

Storage temperature: -30~60 °C

Relative humidity of storage: 20~80%

Altitude: 0~2000 m

Standard: IEC 61439-1/2

3. SAFETY INSTRUCTION

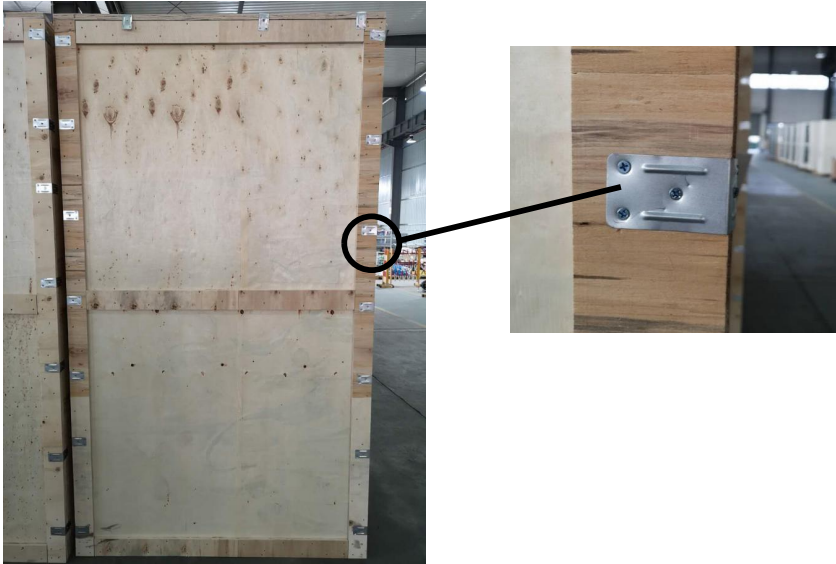


To prevent personal injury or material damage, the inverter and the battery must only be installed, wired, connected, commissioned, maintained and serviced by qualified personnel.

- Qualified personnel eligible to perform the tasks described in this document have following skills and knowledge:
- They are trained in installing electrical devices.
- They understand the functions of the main components in this communication cabinet and how it operates.
- They have read and understand the documents shipped with the device.
- They know and use the appropriate tools and equipment to perform the work.
- They are familiar with all applicable laws, regulations, standards and codes for electrical devices.
- They are familiar with safety requirements and safety-related guidelines for electrical devices.
- They are familiar with national work protection laws and regulations.
- They know and use the appropriate personal protective equipment.

4. Package

The package of communication cabinet is as below:



To unpack the product on site, loosen all the screws on top side and front side of the package.

Remove the top plate and front plate, then there is access to put the cabinet out of the package by a fork lift.

Pay attention: Don't put device in the open-air warehouse when transshipment.
Leaching and mechanical damage by rain, snow or liquid objects is prohibited.

5. Storage

When storing device, it should follow the placing direction that shows on the package. The gap is at least 50cm from package to heat source, cold source, windows or air inlet.

The storage environment temperature is $-30^{\circ}\text{C} \sim 60^{\circ}\text{C}$. If storing or transporting device beyond the working temperature, before startup, set it alone and wait for the temperature reaches to the range of the working temperature and keep the status more than four hours. In warehouse, it's prohibited that there has poisonous gas, objects that inflammable and explosive, corrosive chemical objects. Besides, it shouldn't have too strong mechanical shaking, impact and strong magnetic field. Under the storage conditions above, the storage period is six months. If beyond six months, it has to recheck.

Do not store the cabinet in the open air after unpacking. If it will be stored for long time, please check the tightness of the cabinet and see if there is any abnormal inside the cabinet.

6. MECHANICAL INSTALLATION

6.1 Machine Dimensions Overview

Net dimensions (width, depth, height): 800x800x1940mm



Figure 5-1 Machine Dimensions Overview

6.2 Foot Margin

The foundation shall be designed to support the weight of the enclosures.

Each enclosure needs to be supported in all four corners.

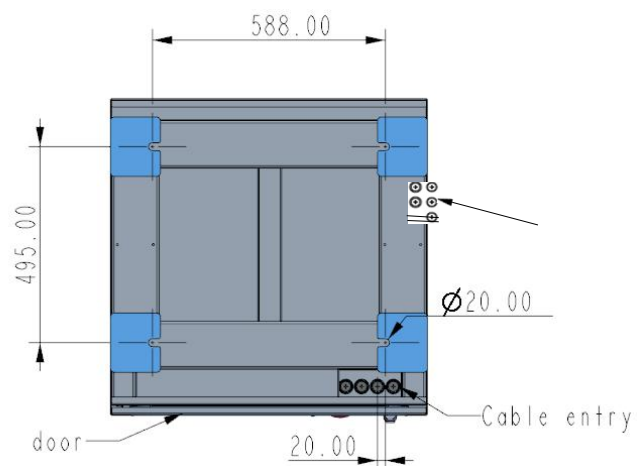


Figure 5-2 Foot Margin

6.3 Lift Point and Fork Dimension

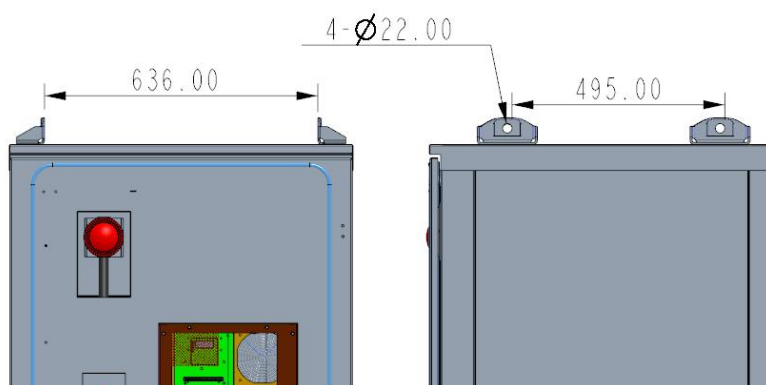


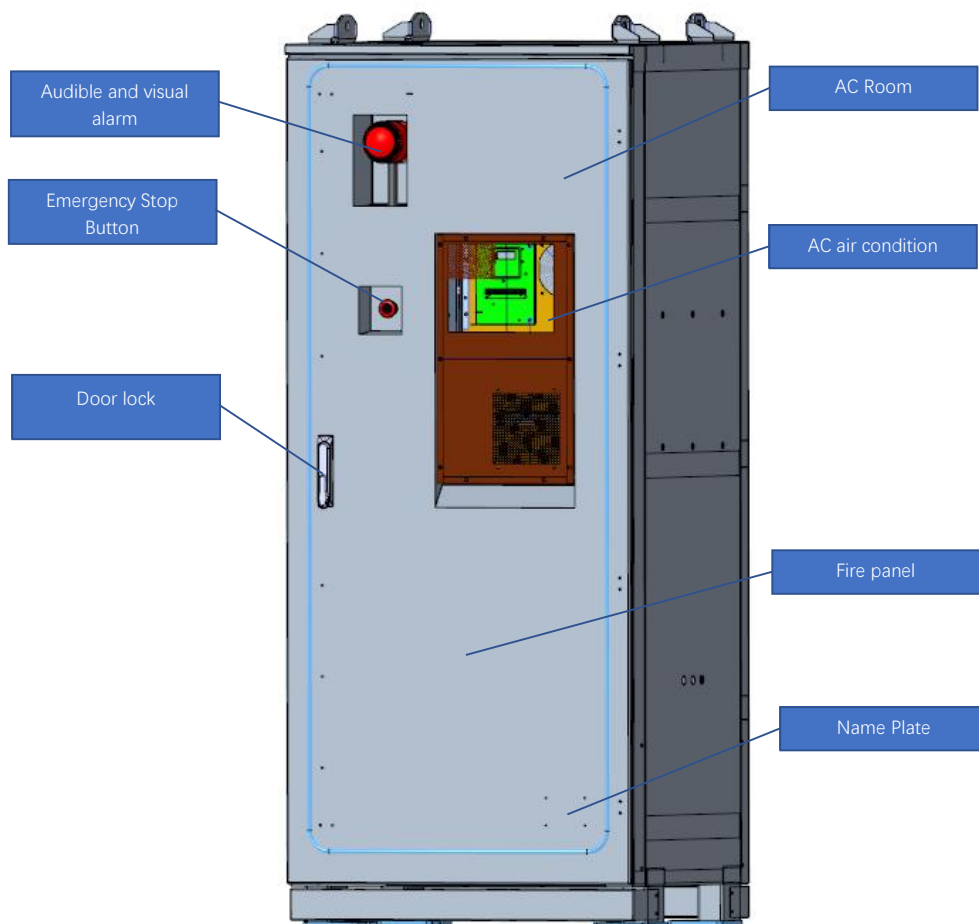
Figure 5-3 Lift Point and Fork Dimension

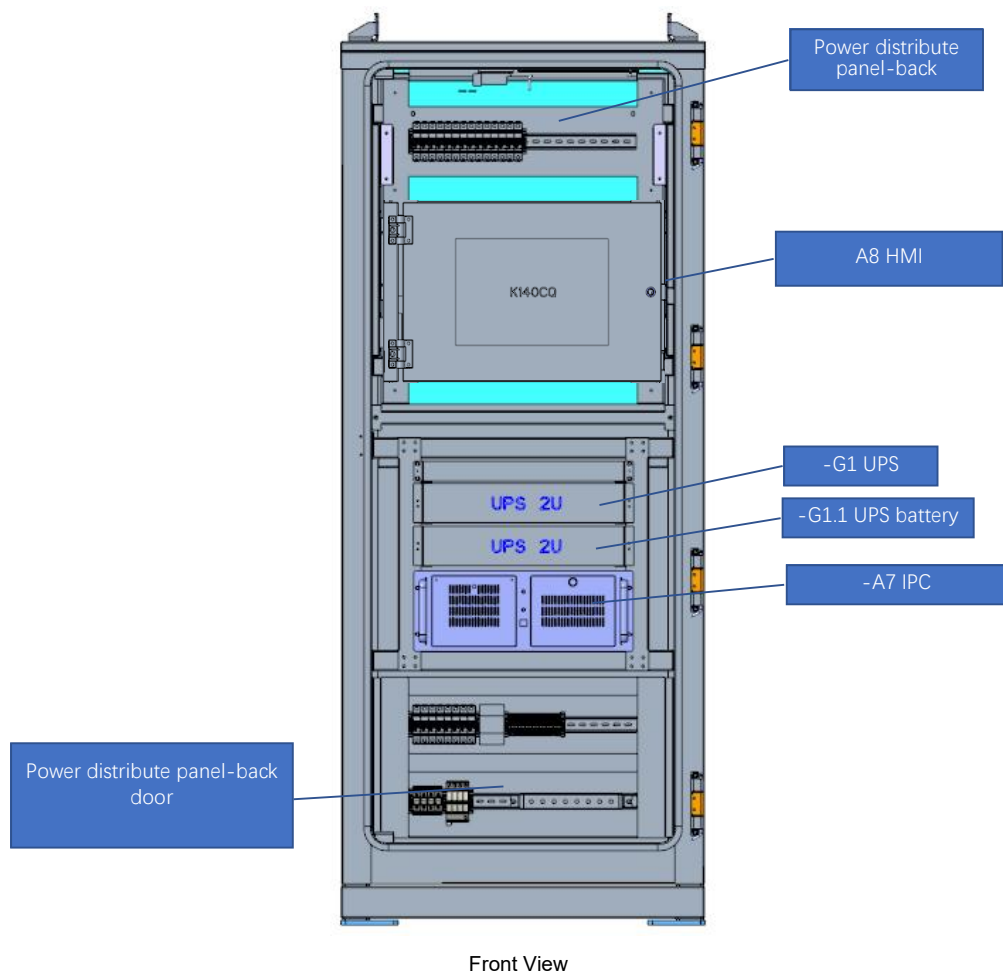
7. COMPONENTS ASSEMBLY ON SITE

At the discretion of the customer.

8. ELECTRICAL CONNECTION

8.1 Cabinet layout Overview

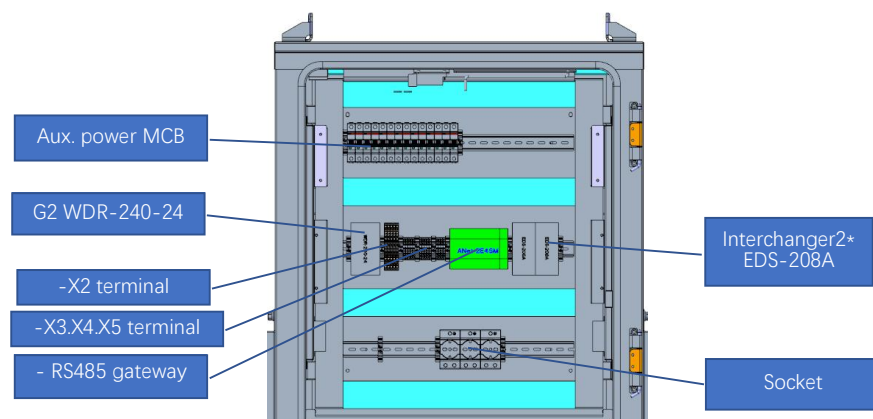




Note1: Please reference to electrical schematic diagram for specific component functions

8.2 AC Room Layout Overview

批注[系统应用-冯子明 1]:



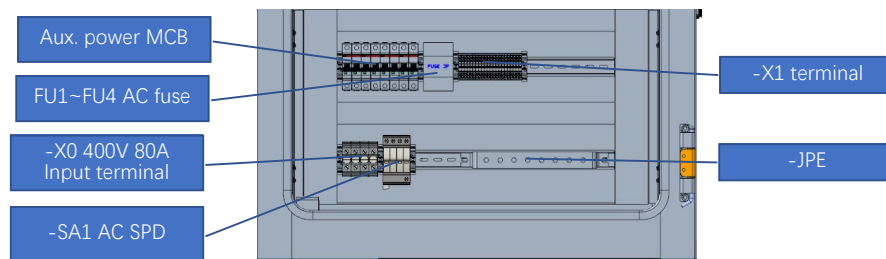
Power distribute panel-back

Target name from left to right and top to bottom:

-F1/-F4/-F5/-F6/-F9/-F10

-G2/-X2/-X3/-X4/-X5/-A30/-A31/A32/-A4/-A5

-A1/-A2/-A3



Power distribute panel-back

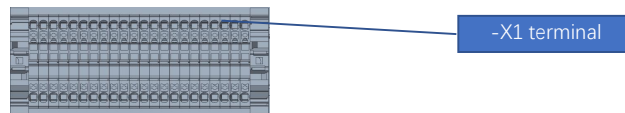
Target name from left to right and top to bottom:

-F2/-F3/-F7/-F8/-FU1/-FU2/-FU3/-FU4/-X1

-X0/-SA1/-JPE

EnerOne chiller 230V power supply connect to bottom of -F2/-F3

EnerOne control box 230V power supply connect to bottom of -F7/-F8



Terminal serial number from left to right

X1:1~X1:21

Terminal are defined sa follows

X1:1 and X1:2 are connected to MBMU:CANH and MBMU:CANL

X1:3 and X1:4 are connected to E101(FSS PANEL):ZONE2+ and E101(FSS PANEL):ZONE2-

X1:5 and X1:6 are connected to E101(FSS PANEL):ZONE1+ and E101(FSS PANEL):ZONE1-

X1:7 and X1:8 are connected to E101(FSS PANEL):EXTING+ and E101(FSS PANEL):EXTING-

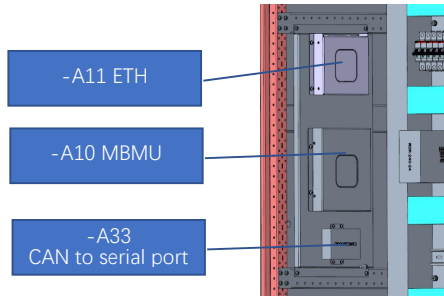
X1:11 and X1:12 are connected to A33: CANH and A33: CANL

X1:15 and X1:16 are connected to A32: A1 and A32: B1

X1:17 and X1:18 are connected to A32: A2 and A32: B2

X1:19 and X1:20 are connected to A32: A3 and A32: B3

X1:21 and X1:22 are connected to A32: A4 and A32: B4



Communication panel-left

Target name from top to bottom:

-A11/-A10/-A33

Note3: Please reference to electrical schematic diagram for cable connection

9. COMMISSIONING

The commissioning procedures are performed to validate and document that the system is correctly installed and ready for operation. The commissioning includes various inspections and function tests. It should be finish by customer in site.

9.1 Inspecting the installation

The system shall be inspected after the installation to ensure that all installation stages have been correctly completed and the actual commissioning can be started.

- Inspect each enclosure externally.
Check that there is no visible damage or deformation.
- Open the access doors and inspect each enclosure internally.
 - a Check that all components are in place and there is no visible damage.
 - b Check that the compartments are dry and free of dust and that there are no foreign objects.
- Check that all components that were supplied loose have been installed.
- Check that all external cables and grounding conductors are connected in accordance with the project-specific documentation. Also check that all cable entries have been sealed with fire rated caulking or foam.
- Check that all bolts and nuts are properly tightened.
- Check that all protective covers are in place and secure.

9.2 Configuring and testing the electrical circuits

The following preparations shall be made before the power feeders are turned on.

- Measure the ground resistance of the DC and auxiliary power circuits.
- Connect all internal connector of the UPS battery in the ACC enclosures.
Connect communication cable
- Connect the internal battery wire harness of the fire alarm control panel.
- Power on all MCB

9.3 Main parameter the system

HVAC and UPS operation

The control parameters are preset at the factory to ensure correct conditions for safe and efficient operation of the batteries.

It is generally not advisable to adjust the settings at the site during normal operation. Contact Sunnic for advice if necessary.

HVAC Control Parameters:

Cooling set point = 30°C

Cooling hysteresis band = 5°C

Heating set point = 10°C

Heating hysteresis band = 5°C

High temperature set point = 40°C

High temperature set point = 40°C

Low temperature set point = 0°C

UPS Parameters:

Output:230VAC,50Hz

9.4 Maintenance Schedule

The maintenance tasks contain regular inspections, preventive maintenance and replacement of worn or damaged parts. Inspections and maintenance must be carefully done at the correct intervals. All maintenance activities shall be recorded along with the reason for the maintenance. Through proper planning of the maintenance, frequent stops and unnecessary downtime can be avoided.

DANGER

Danger to life due to high voltages.

- Follow all safety precautions before starting any maintenance work.
- Before starting the maintenance, make sure that the equipment is shut down and locked out as needed to prevent accidental operation or energizing.

⚠ DANGER

Danger to life from electric shock due to damaged product.

- If the equipment has been stopped due to abnormal conditions, the cause of the situation shall be investigated to ensure that the maintenance work can be performed safely.



For further information related to the maintenance of specific components, refer to the component manuals issued by the original equipment manufacturers.

This section contains the scheduled maintenance intervals for the system and components, recommended by the manufacturer.

Table 9-1 Routine inspections

System or component	Maintenance tasks
Enclosures	<p>In winter conditions, remove excess snow from the site and around the cabinets.</p> <p>To ensure the deflagration panels operate correctly, ensure that the cabinet roofs are not subjected to accumulated snow or ice.</p>

Table 9-2 Every year

System or component	Maintenance tasks
Enclosures	Visually inspect all the cabinet enclosures.
	Check that the enclosure and its seals are in good condition.
	Check that the enclosure is dry and no water can access the enclosure.
	Check the enclosure door operation and door seals.
	Check the overall cleanliness of the enclosure, and ensure there is no rust or other signs of damage.
	Remove dust by using a vacuum cleaner, if necessary.
	Check that the wirings and contacts are secure and in good condition.
E-stop	Test the process stop operation by pushing the E-STOP button on the AC cabinet front panel.
UPS device	Visually inspect the uninterruptible power supply (UPS) device in AC cabinet and battery cabinet.
	Test the operation by removing the auxiliary power from the system.
UPS battery	Check the condition of the battery. Ensure that the battery terminals are clean. When cleaning the batteries, use a soft damp cloth.
	Replace batteries with the new ones before the end of their useful life as determined in the specifications.
MBMU/ETH modules	Visually inspect the CATL master battery management unit (MBMU) and ETH modules in AC cabinet for loose wires.
Grounding	Check that all the grounding connections are secure.
SPD and Protect fuse	Check that all the fuse base connections are secure and fuses in short circuit state, the aux. contacts of SPD module in normally statues.
FACP	Clean the fire alarm control panel (FACP) located in the AC cabinet.
	Wipe the fascia door with a damp cloth. Do not use detergents or solvents. Ensure no water enters the cabinet during cleaning.
	Test the standby batteries in accordance with the battery manufacturer's recommendations to determine their suitability for continued standby operation.
	For detailed maintenance instructions, see the FACP manual.
Ventilation fan filter	Replace and clean the fan blades.

Continued on next page

System or component	Maintenance tasks
HVAC system	Visually inspect that the all wirings for HVAC system are secure.
	Ensure the fan can turn freely without abnormal noises.
	Inspect the heating, ventilation and air conditioning (HVAC) system.
	Check the drainage outlet it is not blocked.
	Check the cleanliness of the condenser, and clean it with compressed air.
	Perform a functional test of the HVAC system.
Warning and safety devices	Test the strobe and siren operation. Test with smoke detector.

Table 9-3 Every three years

System or component	Maintenance tasks
FACP	Replace the fire alarm control panel (FACP) standby-batteries every three to five years, or when the low-battery indicator is lit on the power supply.
UPS Battery	Replace the ups control panel standby-batteries every three to five years, or when the battery replace indicator come on.

9.5 Spare Part List

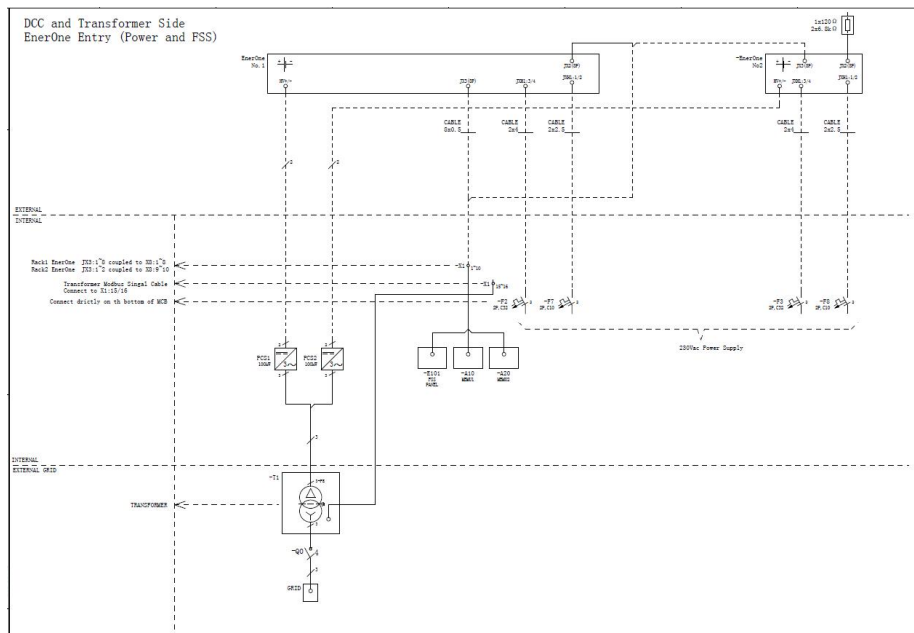
As customers requirement.

10. APPENDIX

List of Diagrams:	
1	Spare Parts List
2	Electrical Schematic Diagram
3	Single Line Diagram
4	HVAC Manual
5	UPS Manual

10.1 Electrical Schematic Diagram

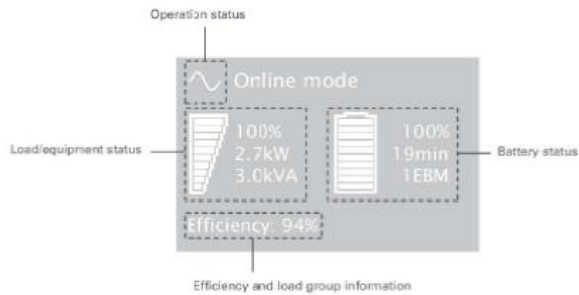
10.2 Single Line Diagram



10.3 UPS Usage instruction







After 5 minutes of inactivity, the LCD displays the screen saver.

The LCD backlight automatically dims after 10 minutes of inactivity. Press any button to restore the screen.



The following table describes the status information provided by the UPS.

Note: If other indicator appears, see troubleshooting on page 35 for additional information.

Operation status	Cause	Description
Standby mode 	The UPS is Off, waiting for start-up command from user.	Equipment is not powered until button is pressed.
Online mode 	The UPS is operating normally.	The UPS is powering and protecting the equipment.
Battery mode 	A utility failure has occurred and the UPS is on Battery mode.	The UPS is powering the equipment with the battery power. Prepare your equipment for shutdown.
1 beep every 10 seconds End of backup time 	The UPS is on Battery mode and the battery is running low.	This warning is approximate, and the actual time to shutdown may vary significantly.
1 beep every 3 seconds High Efficiency mode 	The UPS is operating on High Efficiency mode.	The UPS is powering and protecting the equipment.
Bypass mode 	An overload or a fault has occurred, or a command has been received, and the UPS is on Bypass mode.	Equipment is powered but not protected by the UPS.

