EdgeRack 3P Series
USER MANUAL

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Notice

Enconnex is not responsible for damages to the unit or personal injury due to noncompliance with operation requirements as outlined in this document.

- This User Manual must be strictly complied with at the time of installation and throughout the life of the EdgeRack 3P and the integrated cooling unit.

- Operation of the cooling unit equipment must be completed by professionals who are familiar with this manual.

- Only technicians that have received professional training from Enconnex may service the system.

- Power to the EdgeRack 3P must be shut off if internal maintenance of the equipment is required.

- Warranty of the equipment is ensured only under the premise that the contents included in this manual are complied with.

- Parameters included in this manual are only to be used as a reference. Enconnex reserves the right to change the parameters without prior notice.

- In case of a lost, damaged, or misplaced manual, a replacement copy can be requested from the Enconnex website, www.enconnex.com.

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

- Children should be supervised to ensure that they do not play with the appliance.

- This appliance can be used by children aged 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance safely and understand the hazards involved. Children shall not play with the appliance.

Cleaning and user maintenance shall not be performed by children without supervision.

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons to avoid a hazard.

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1. General Safety Precautions

1.1 Overview

Enconnex is not responsible for any of the following situations:

- Operation of equipment in adverse environments beyond the manual instructions.

- Any installation and operation environment beyond regulations of any relevant international standards.

- Altering of the product or changes in the software without prior approval.

- Failure to follow the product and manual's operational instructions and safety warnings. See the end of this manual for further details.

- Equipment damage caused by natural disasters.

1.2 Local Rules and Regulations

Local rules and regulations should be followed during equipment operation. Safety precautions in the manual serve as a supplementary guide to local safety specifications.

1.3 Basic Installation Requirements

Personnel performing the EdgeRack 3P installation and maintenance must receive authorized training.

- Equipment installation, operation, and maintenance can only be conducted by qualified and trained people.

- Replacing and changing equipment or components (including software) must be completed by professionals with Enconnex certification or authorization.

- Operators should immediately report faults or errors which may cause safety issues.

2. Product Overview

The EdgeRack 3P Series Secure Integrated Cabinet from Enconnex is a fully integrated enclosure system that provides the power, cooling, management, and security you need in a small footprint. Equipped with 3.5 kW of cooling, power management, environmental sensors, remote monitoring, and intuitive controls, this turn-key solution is 100% ready to be outfitted with whatever equipment you need for your business to be successful. The EdgeRack 3P is ideal for areas where space is limited and/or heat levels could be a concern and is a perfect solution for small to medium offices, retail outlets, educational institutions, and remote edge computing locations.

2.1. Appearance

Figure 2-1 Appearance of EdgeRack 3P

2.2. Specifications

Table 2-1 Specifications

Model	ECX-ER3P-42UXX
UPS	3 kVA
Input power	208~240 V 50/60 Hz
Usable IT space	26U
Rated Cooling capacity	3.5 kW
Dimension (W x D x H)	600 mm x 1100 mm x 2025 mm
Net weight	330 kg

2.3. Components

The EdgeRack 3P product mainly includes a cabinet structure, power distribution module (PDM), UPS & Battery, cooling units, emergency ventilation system, monitoring system, and LCD display. The system components are shown in Figure 2-2 and Table 2-2
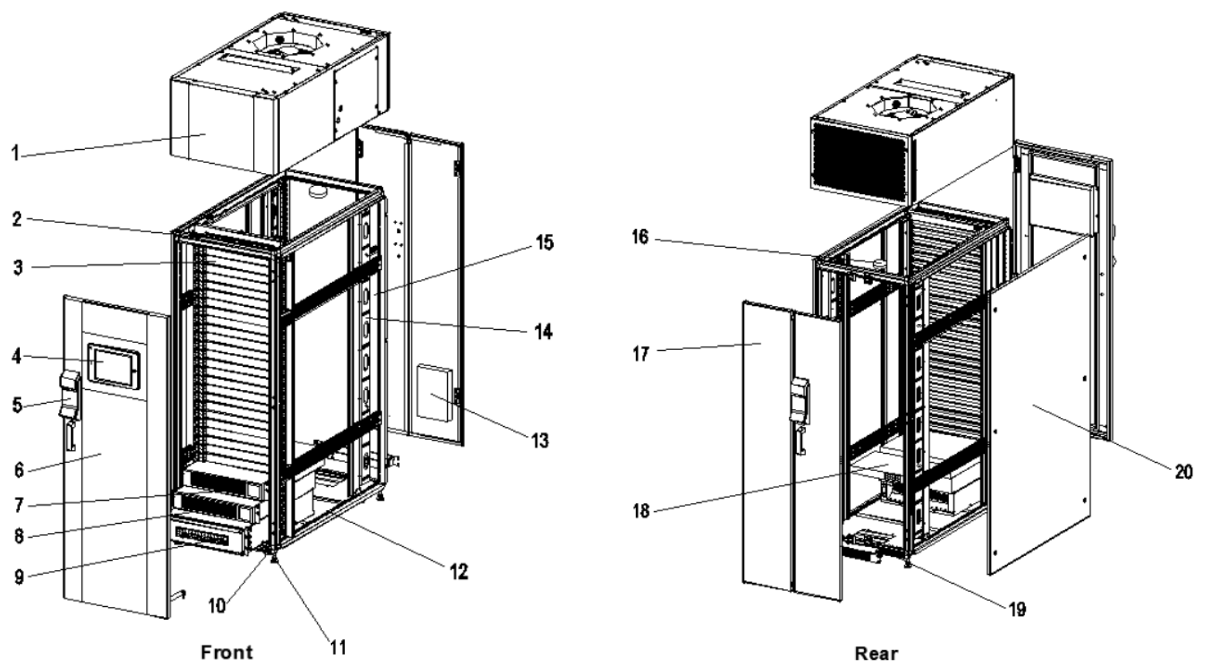

Figure 2-2 Components

Table 2-2 EdgeRack 3P Main components

No.	Component Name	Functions
1	Cooling unit	The cooling unit provides clean air for stable temperature and humidity to critical load equipment.
2	Temp & Humidity sensor	Detects the temperature and humidity of the cold air output.
3	Blanking panel	This allows for hot and cold airflow isolation improving the cool air utilization.
4	Integrated HMI screen	The touch-screen HMI monitors, controls, and alarms all the components, including the UPS, cooling unit, temperature and humidity sensors, door switch, leak detector, and other dry contacts. All information can be monitored remotely by the network. For details, refer to the monitoring system chapter.
5	Access control	This provides keypad and fingerprint access to the EdgeRack at the front and rear doors.
6	Double-layered glass door	Isolate the inside and outside of the cabinet and protect the equipment in the cabinet.
7	UPS	The UPS provides power conditioning and switches to a backup battery when mains power is lost.
8	Battery	The battery provides backup power through the UPS when mains power is lost and charges when mains is restored.
9	Power distribution	Power distribution for critical

	module	load equipment and EdgeRack equipment.
10	Casters	The installed casters provide for easy maneuverability.
11	Leveling feet	The feet are adjustable for installation on slightly uneven floors.
12	Water leakage sensor	This provides an alarm if a water leak is detected at the bottom of the EdgeRack.
13	Access control box	For access control communication, control the opening and closing of the door.
14	Cable management	It is used for cable sorting and fixing to make the cable tidier and more standardized.
15	PDU	This provides integral power distribution for user-installed equipment.
16	Smoke sensor	The smoke sensor provides alerts when activated.
17	Steel split doors	Isolate the inside and outside of the cabinet and protect the equipment in the cabinet.
18	Network switch	Installed for network connection communication.
19	Mag-locks	The magnetic locks allow for emergency ventilation in over-heating conditions.
20	Cabinet side panel	Isolate the inside and outside of the cabinet and protect the equipment in the cabinet.

2.4.   Environmental requirements

2.4.1.   Operating conditions

The installation location for EdgeRack 3P should be easily accessed, away from heat, direct sunlight, and corrosive gasses. Operating conditions are shown in Table 2-3.

Table 2-3 Operating conditions

Items	Requirement
Temperature	18℃～45℃
Humidity	20%～80%
Altitude	Altitude < 1000 m, above 1000 m derating capacity, power derating 6% per kilometer
Rated voltage	208~240 V 50/60 Hz

Note
• During operation in high temperature and high humidity environments, there may be condensation on the external surface of the front glass door. However, it is a normal phenomenon and doesn't affect the operations or usage.
• Derating is required for altitudes above 1000 m. For the UPS, the altitude should be less than 1500 m. Derating is required for altitudes above 1500 m with reference to local standards.

2.4.2.   Storage Environment

Table 2-4 Storage Environment

Items	Requirement
Environment	Clean (no dust), good ventilation
Environment Temperature	-40℃～+60℃
Environment humidity	5%RH～95%RH without condensation

2.5.   Space

There must be sufficient space for installation, service, and maintenance of the EdgeRack 3P unit. The figure below shows the area required on the front and rear sides of the EdgeRack 3P unit.

A clearance of at least 2.6 ft (800 mm) is recommended on all sides of the installed EdgeRack 3P. 2.6 ft (800 mm) is also recommended between adjacent EdgeRack 3P units. At least 400 mm space shall be reserved on the top of the unit.
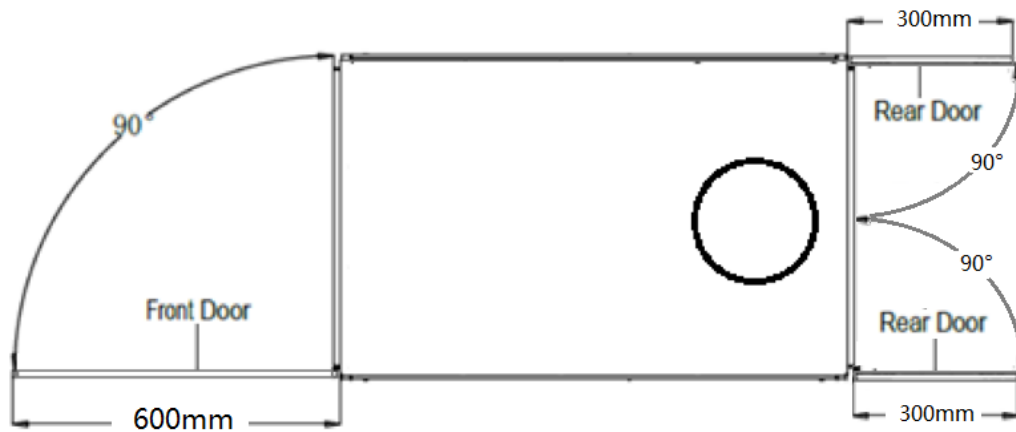

Figure 2-3 Before opening the enclosure, the space required for the rear door

EdgeRack 3P model product space requirements inside the room where it is to be installed are mentioned in the figure below.
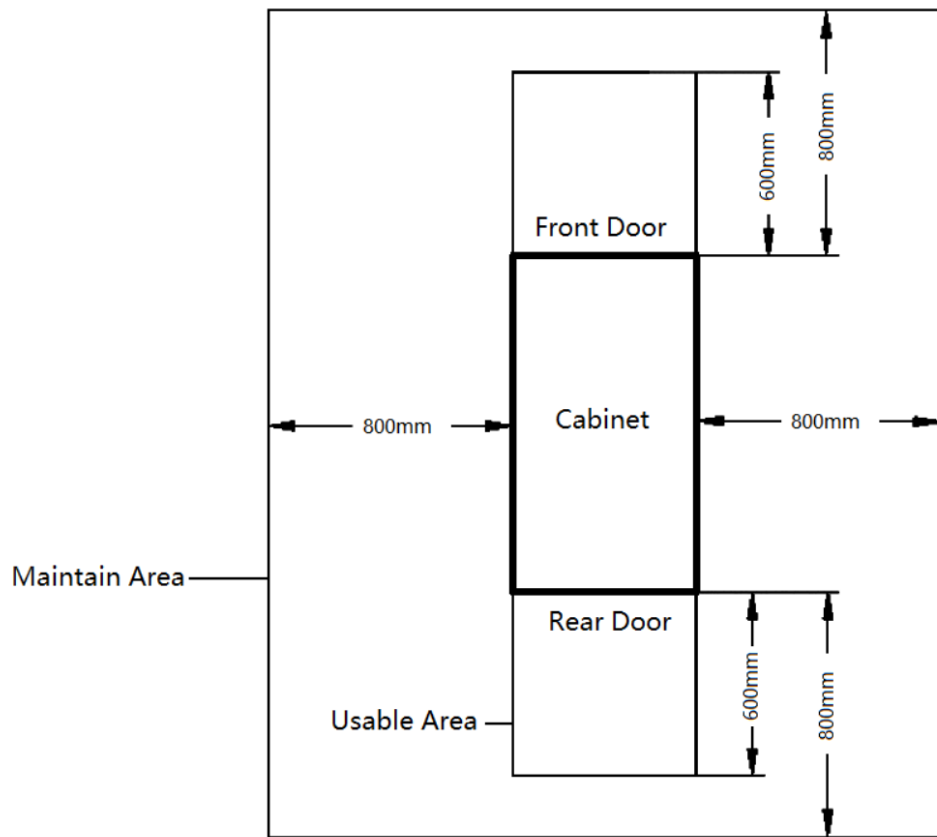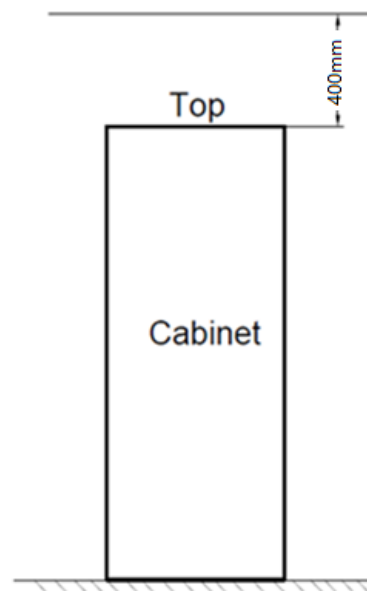
Figure 2-4 Model space requirements

Figure 2-5: Top space requirements

2.6.   Weight capacity

The EdgeRack 3P product is heavy equipment, and therefore, the weight-bearing capacity of the computer room floor must be considered.
However, during installation, the weight-bearing capacity of the floor should also be estimated based on the cabinet's total weight, which also includes the installed equipment.

Note

If the weight-bearing capacity cannot be estimated, consult the nearest ENCONNEX office or the customer service/support center.

3. Installation

3.1. Installation Instructions

Please install the equipment in strict accordance with these requirements to achieve the best operation and longest lifetime.

- Before installation, ensure that the installation environment complies with the requirements and that the building is suitable for electrical wiring and air duct construction.
- The installation shall strictly follow the design drawings with maintenance space reserved.
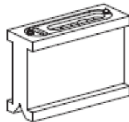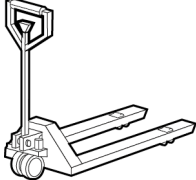
Note

- Ensure the installation location is capable of supporting the total weight of a fully-loaded EdgeRack 3P.
- To ensure proper airflow, prepare to use blanking panels on the front in RU spaces not occupied by IT equipment.
- It is recommended that the EdgeRack 3P be installed in a room that does not have employees working on a continual basis. The cooling runs at about 62 dBA.

3.1.1. Tools

Table 3-1 shows the usual tools used during the installation process.

Table 3-1 Install Tools

Name	Drawing	Name	Drawing
Level		Philips screwdriver	
Stepladder		Electric drill	
Electric Forklift		Hand forklift	

3.1.2. Accessories

Air duct (5m*Φ350mm)　　　Duct clamp　　　Air duct mounting flange
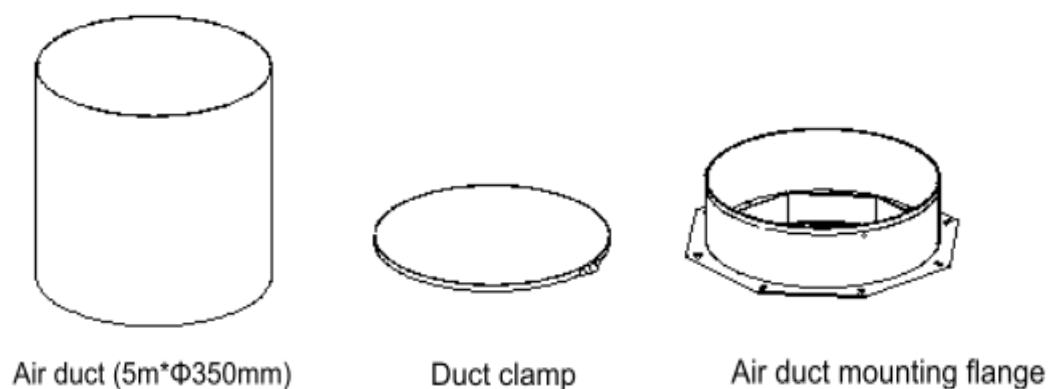
Figure 3-1 Accessories

Table 3-2 Accessories

No.	Product Name	Material	Quantity
1	Air duct (5m x Φ350mm)	Nylon + Steel wire	1
2	Duct clamp	Metal	1
3	Air duct mounting flange	Metal	1

3.1.3. Self-Prepared Materials

Please prepare the below materials before operating the unit.

Table 3-3 Self-Prepared Materials

Parts	Specifications
Plug	EU: 2 * IEC30916 (16A) US: 2 * L6-20P (20A)
Power wire cable	4 mm^2
Network cable	CAT6

3.2. Equipment transportation, unpacking, inspection

3.2.1. Transportation & Movement

The EdgeRack 3P should be considered fragile and care must be taken

during transport, handling, and installation.

The appearance of the entire package, including all the components, is shown in Figure 3-2.
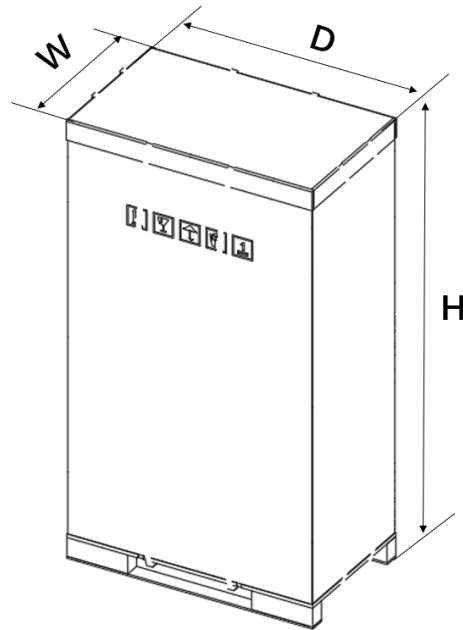
Figure 3-2 Package inclusive of components

Table 3-4 Shipping Dimensions of the unit

Item	Package	Shipping Dimension (unit: mm)			Shipping Weight (unit: kg)
		W	D	H	
EdgeRack 3P	Wooden	715	1275	2280	415

The EdgeRack 3P, including the cabinet, closed frames, and the cooling unit, needs to be moved to the vicinity of the installation site. EdgeRack 3P, as a piece of equipment with large components, is on the heavier side and needs to be transported using equipment such as a hand pallet truck or electric forklift.

Figure 3-3 shows the schematic diagram of a hand pallet truck and an electric forklift.
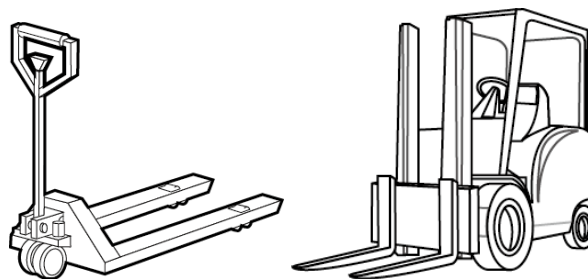
Figure 3-3 Hand Pallet Truck & an Electric Forklift

When using a hand pallet truck or an electric forklift truck, the tines of the hand pallet or electric forklift must be aligned with the center of gravity to prevent the package from toppling or falling over, as shown in Figure 3-4.

Forklift direction
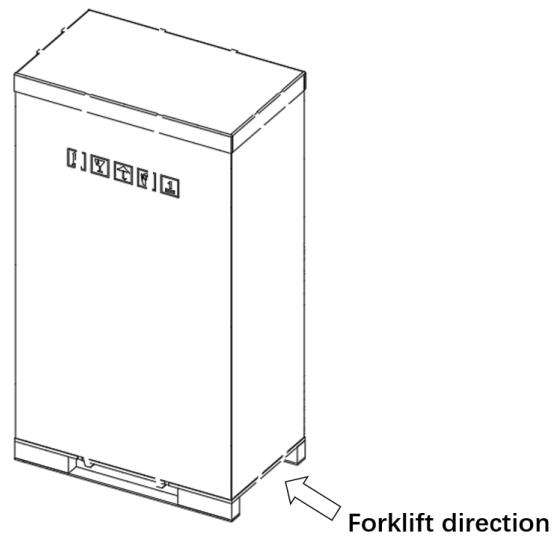
Figure 3-4 Forklift Direction

During transportation and installation, in order to avoid pipes from being damaged and refrigerant from leaking, the equipment should not be excessively jolted or tipped.

Warning: After transportation, like any refrigerant system, you must keep it in its final location for some hours before starting up.

● Transportation inclination shall not exceed 15 °. Stay for 8 hours before starting up.
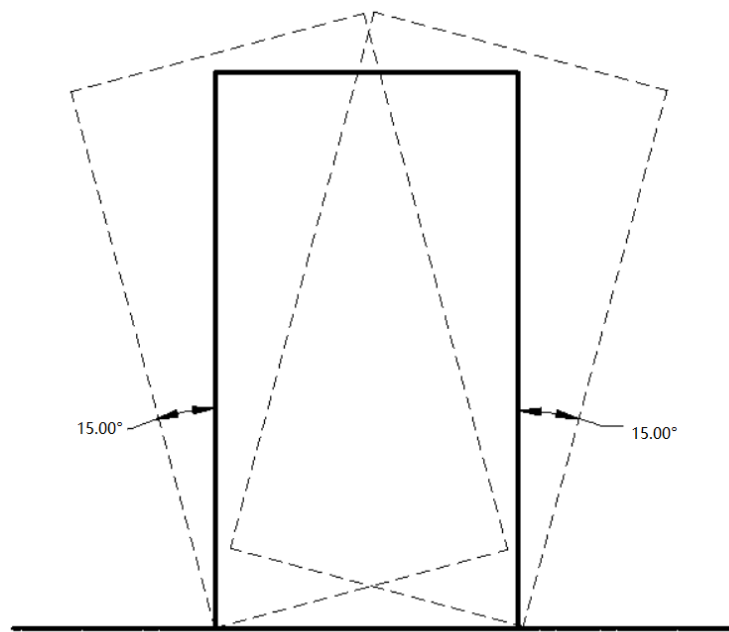
Figure 3-5 Carrying obliquity

Note

- Ensure that the equipment stands upright. Do not place the equipment outdoors.
- While using the forklift or the hand pallet truck, ensure that the fork arms (if adjustable and flexible) open to the greatest extent, ensuring that the fork arms can be placed under the pallet of the equipment in a precise manner.
- Ensure that the length of the fork arms matches with the equipment.
- Use mechanical handling tools such as forklifts or pallet jacks during the unloading and moving process. Place the unit in the middle to guarantee symmetry. It is important to move slowly and carefully to prevent dents and scratches to the equipment.
- Check the quantity and type for accessories according to the packing list. In case of missing accessories or nonconformity of models, please keep field records and immediately contact the Enconnex Customer Service Center or representative.
- Be careful when moving the EdgeRack 3P after it has been operating. The condensation tray may contain water that must be drained out before moving the EdgeRack 3P. Take similar steps when moving the EdgeRack 3P as was taken during the initial installation.

3.2.2. Unpacking

Packing materials of the cabinet are reusable. Keep the packing materials for further use or dispose of them appropriately as per the protocols and local regulations.

Please follow the steps and procedures below to unpack. Please wear protective gloves during the operations below.

Step 1: Open the fixing tongues on the wooden package, there are 52 pcs fixing tongues in total. Insert one end of the wrench into the tongue hole of the cover on the wooden box, turn the wrench, and straighten the tongue, as shown in the figure. You can also use a flat-mouth screwdriver or claw hammer.
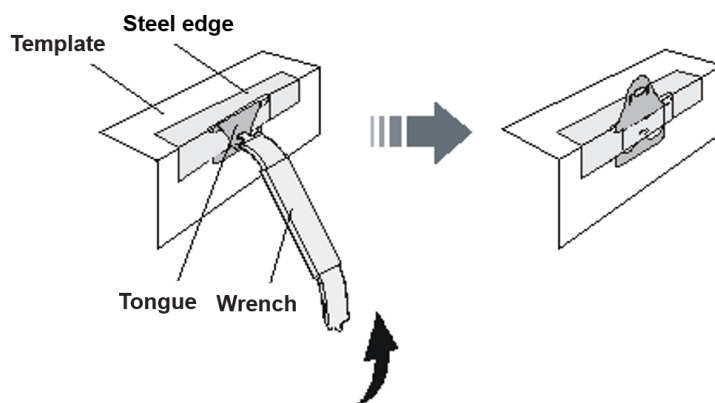
Figure 3-6 Open the tongue

Step 2: Remove the top cover plate, take out the two ramps placed on the top of the cabinet for reserve.
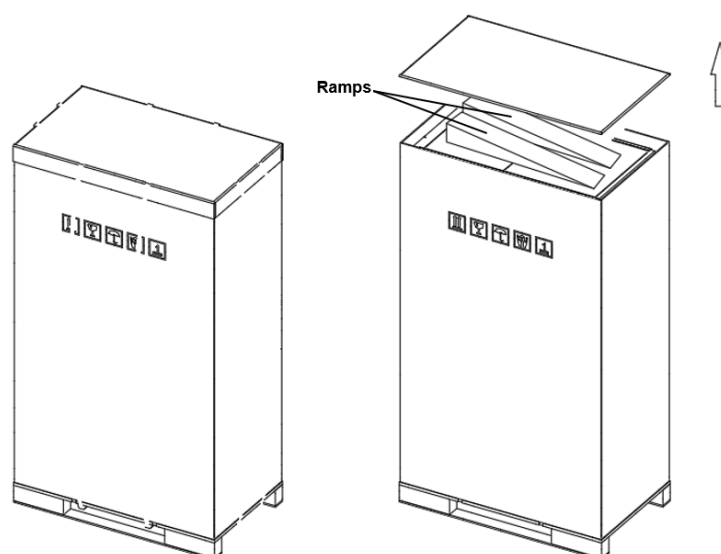
Figure 3-7 Remove the top cover plate

Step 3: Remove the four pieces of sideboards and the internal foam packaging as shown in the figure.
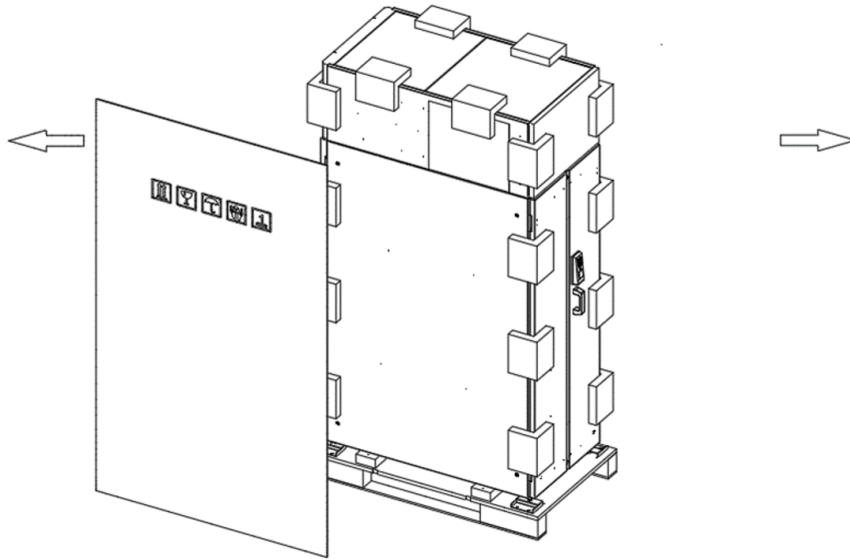
Figure 3-8 Remove the four pieces of sideboards

Step 4: Remove the fixings of the cabinet and the wooden tray, turn the wrench to raise the four fixed legs, remove the wooden strips on both sides of the bottom of the cabinet, and put them into the bottom gap of the wooden tray to prevent the wooden boards supporting the tray.
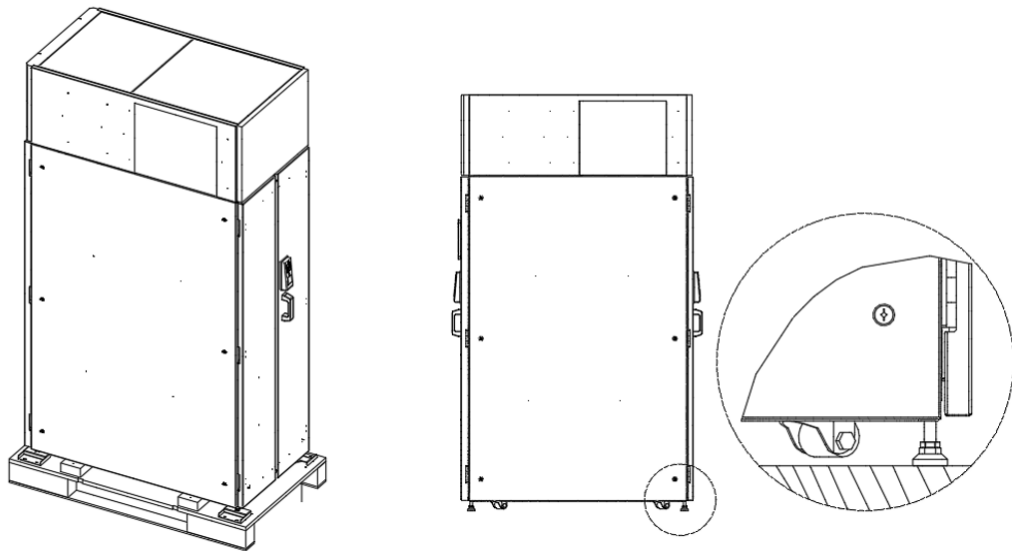
Figure 3-9 Remove the fixings and adjust the leveling feet

Step 5: Turn the wrench to lower the four fixed legs, taking care to minimize the contact between the cabinet wheels and the wooden tray.
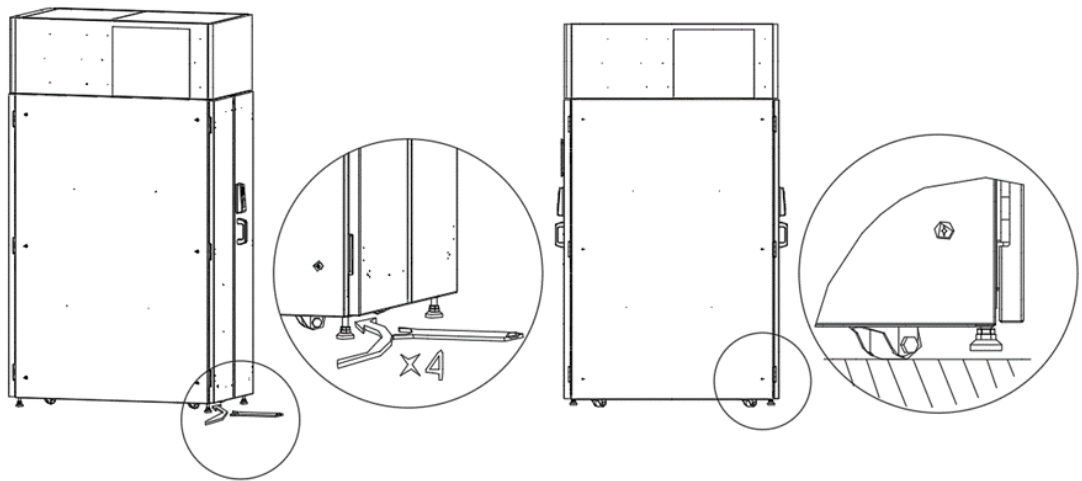
Figure 3-10 Adjust the leveling feet

Step 6: Place the reserved 2 ramps on the edge of the steel belt tray and push out the cabinet to the ground.
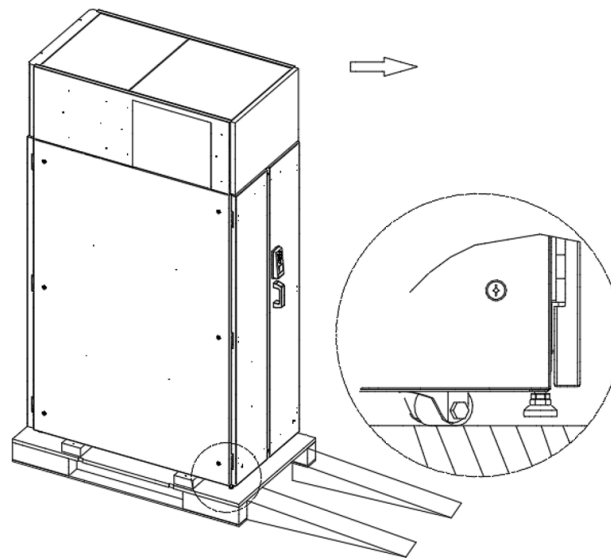
Figure 3-11 Push the cabinet

3.3.   Installation

In this section, the installation and commissioning will be explained in detail. Ensure that all the installation tools and fittings are available prior to installation.

⚠️Attention

Following are some safety measures that must be observed prior to installation of the EdgeRack 3P system:
- Before installation, ensure that the installation site is clear. The site gradient level has to be confirmed and should meet the requirements.
- Switch off the power during installation. Operation on any electrified equipment

is forbidden. The connecting cable must comply with related requirements.

3.3.1. Installing the cabinet

Following are the steps that need to be observed while installing the cabinet:

Step 1: Plush the cabinet into the installation position.
Step 2: Turn the wrench and adjust the four leveling feet .
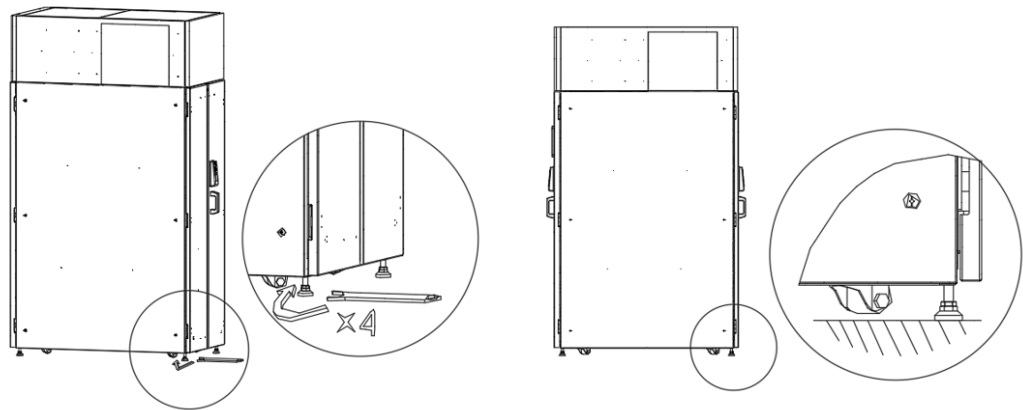
Figure 3-12 Fixed cabinet

NOTE:
- To maintain standard cabinet height, do not remove the leveling feet. The leveling feet should support the entire weight of the cabinet without reliance on the casters.
- Leveling feet adjustment method: Use a wrench to adjust the leveling feet. A clockwise adjustment of the leveling feet will increase the cabinet height. A counterclockwise adjustment will decrease the height. The leveling feet have an adjustment range of 0 mm ~ 80 mm.
- Leveling criteria: Use a level to ensure widthwise and depth-wise stability of the EdgeRack 3P.

3.3.2. Installation of cooling accessories

- Install cooling drain pipe

NOTE:
Edgerack 3P is equipped with automatic evaporating condensate water, which can be used without a drain pipe during normal operation. For emergency drainage, the installation of a condensate drain pipe is shown in figure 5-2.

3.3.3. Installation of air duct

It is recommended that the air duct at the top of the EdgeRack 3P be plumbed into the main HVAC return. A flexible tube (5 meter x Φ350 mm) is included.
If there is a request for the long-distance air duct installation, please purchase it with a diameter of 350 mm from a local supplier.
Below is the installed procedure.

- Install the air duct mounting flange with the supplied M6x16 combination screws.
- Place a duct clamp over the air duct mounting flange.
- Install the air duct over the mounting flange and tighten the duct clamp.
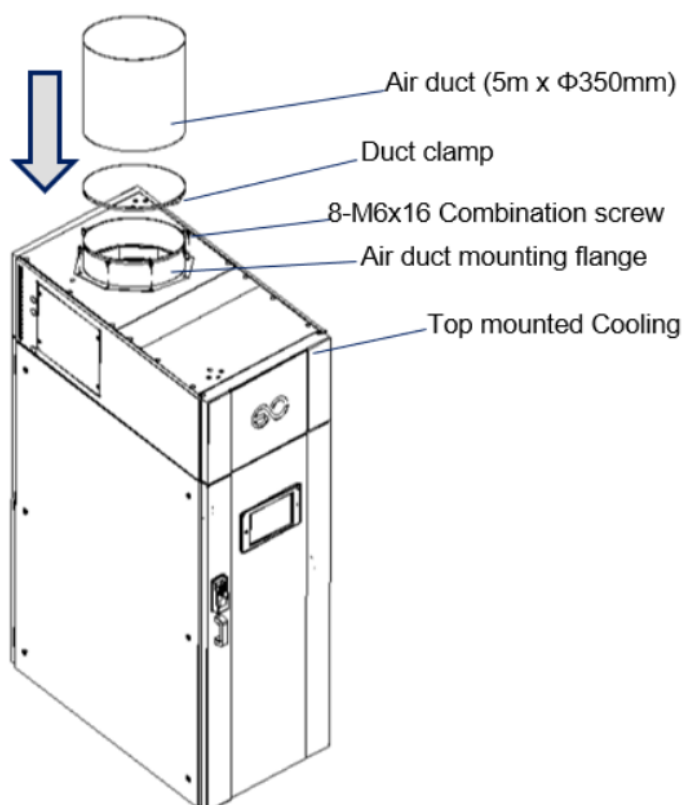
Figure 3-13 Air duct installation diagram

NOTE: If overhead space is limited, the air duct can be clamped to the mounting flange before the mounting flange is secured to the top of the cabinet.

3.3.4. Connect the power cable

- Use a quick connector to connect the main power and cooling unit power.
- Connect single-phase power supply, L + N + PE, cooling input power 16A/20A, and UPS input power 16A/20A.

Figure 3-14 Connect the power supply of the cabinet

3.3.5.   Network connection

Figure 3-15 Connect the network cable to a network switch

3.4.   Power-up and Shutdown Procedure

After the installation, please follow the procedure below to power up and shut down the unit.

3.4.1.   Inspection

Overview
- Please follow the nominal voltage listed in the nameplate.
- System electrical connected correctly.
- All connections are tight.
- The rating value of the circuit breaker or fuse is correct.

Before operation, please check the status of every unit according to table 3-5.

Table 3-5 Checklist

Inspection Items	Checking details and requests.
Unit appearance.	Appearance without damage, surface is clean, insulation is in good condition.
Electric line	Power supply connection should not be loose. Measure and record the voltage value before starting up the unit.
Electric control box	The electrical components of the control box are good.
Top cooling unit	No blocked-on air inlet and air outlet spot.

3.4.2.   Power-up procedure

● **Turn on the breakers**
Follow the procedure (refer to Figure 3-17) to power up the unit.
Turn on the breakers on the power distribution module; refer to Figure 3-16
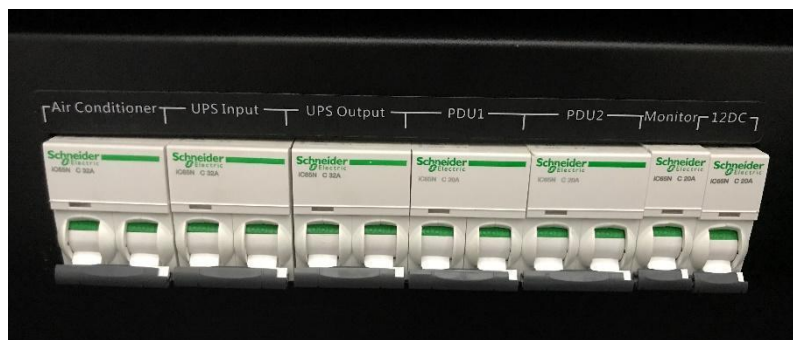
Figure 3-16 Power distribution module Breaker

NOTE: The picture is only for illustration; please refer to the real devices.
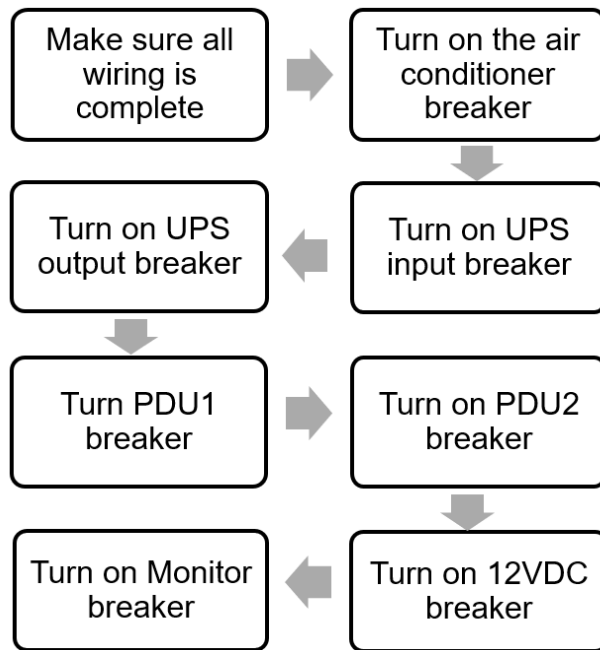
Figure 3-17 Power-up procedure

● **UPS power-up**

After turning on the UPS input breaker and the UPS output breaker, press and hold the ENTER/ON button on the UPS (shown in Figure 3-18) for 5 seconds to transfer UPS mode from bypass to line mode.

Figure 3-18 UPS controller key

After UPS is powered on, the normal status of the UPS LCD display screen is shown in Figure 3-19.
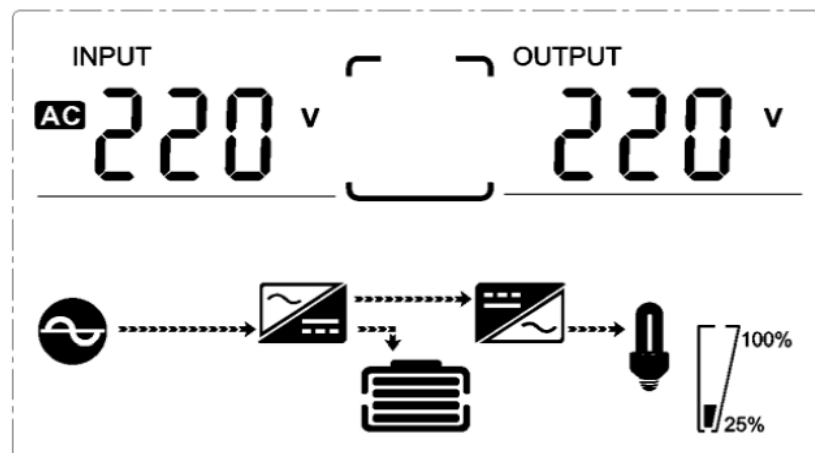
Figure 3-19 UPS power-up status

3.4.3. Access control setting

If you use the access control for the first time, you need to input the User ID and password to access the setting interface of access control. The default User ID of the access control is **4321**, and the default password is **4321**.

Follow the below steps to set the access control on both front and back doors.

a. Adding User

Including adding super admin and normal users.
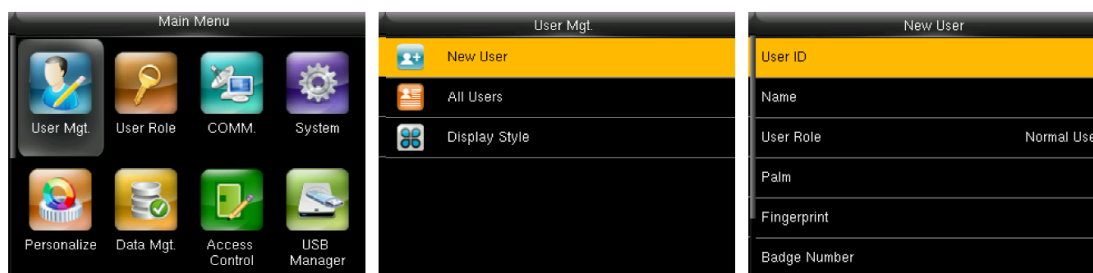
Figure 3-20 Adding User

In the initial interface, press **[M/OK]** > **User Mgt.** > **New User** to enter **New User** setting interface. Settings include inputting User ID, name, choosing User Role, registering Palm Fingerprint and badge number★, setting Password, and setting Access Control Role.

Setting User ID: Select **User ID** to enter the interface for setting the user ID, input 1 to 14 digits and click "**[M/OK]**" to complete the setting.

Setting Name : Select **Name** to enter the interface for setting the name, input the username and click "**[M/OK]**" to complete the setting.

Add Palm: Select **Palm** to enter the interface for setting the palm, point your palm at the camera according to the voice prompt of access control, and the setting will be completed after the voice prompt is successful.

Add Fingerprint: Select **Fingerprint** to enter the interface for setting the fingerprint, select the input finger, enter the fingerprint at the top of the access control, and complete the addition after the screen prompts success.

Add Password: Select **Password** to enter the interface for setting the password, input 1 to 8 digits password and click "**[M/OK]**", repeat the password and click "**[M/OK]**" to complete the setting.

Add a Super Admin: Choose **"Super Admin"** in **[User Role]**, who is allowed to operate all the functions on the menu.

As shown in Figure 3-19, the user with User ID 1 is a super admin.
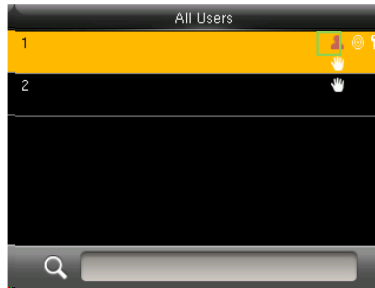
Figure 3-21 Add a Super Admin

Add a Normal User: Choose "Normal User" in **[User Role]**. When the Super Admin is set, Normal Users can only use palm, fingerprint, or password for verification; when the Super Admin is not yet set, Normal Users can operate all functions on the menu.

NOTE:

The device automatically allocates user ID for users in sequence, but users can also set it manually.

b. Setting Access Control

The user access control option is to set open-door access aimed at everybody, including access group setting, verification mode, time zone, and duress fingerprint management.
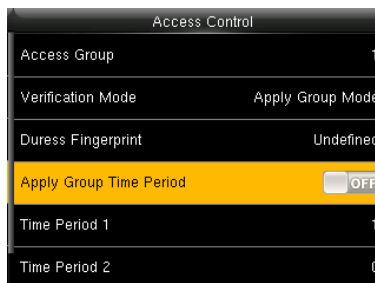
Figure 3-22 Access control

Access group: To allocate users to different access control groups for management. New users belong to Group 1 in default settings, and can be reallocated to other groups.

Verification mode: Users can choose either group or individual verification. If individual verification is chosen, the verification method used by other group members will not be affected.
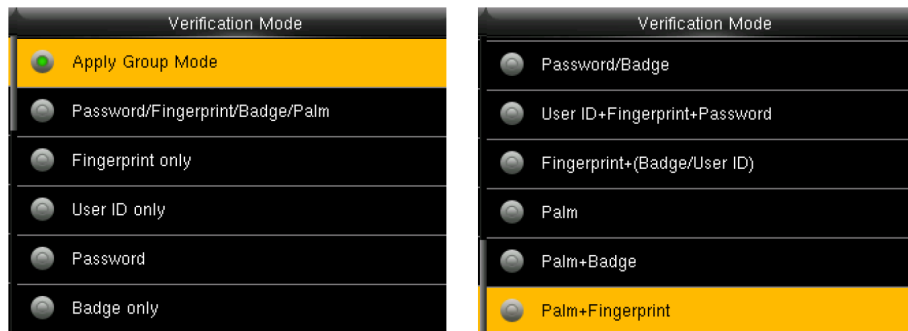
Figure 3-23 Verification mode

NOTE: Individual verification shall prevail over group verification.

Duress Fingerprint: Users can choose one or more registered fingerprint(s) as Duress Fingerprint. When that fingerprint is verified, a duress alarm will be triggered.

Example: Among those registered fingerprints (6, 7, 8), choose the 8th fingerprint as the duress fingerprint.
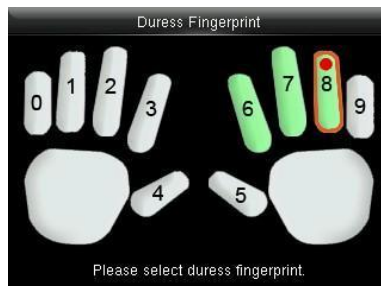
Figure 3-24 Duress fingerprint

Apply Group Time Period:
- When this function is on, the user uses the default time zone of their group.
- When this function is off, the user needs to set a personal time zone (not using the group time zone). This will not affect the access time zone of other group members.

3.4.4.   Shutdown

Once you shut down the unit, please follow the steps below.

```
┌─────────────────┐      ┌─────────────────┐
│ Turn off Monitor│ ──▶  │ Turn off 12VDC  │
│     breaker     │      │     breaker     │
└─────────────────┘      └─────────────────┘
                                  │
                                  ▼
┌─────────────────┐      ┌─────────────────┐
│ Turn off PDU 2  │ ◀──  │ Turn off PDU1   │
│    breaker      │      │     breaker     │
└─────────────────┘      └─────────────────┘
         │
         ▼
┌─────────────────┐      ┌─────────────────┐
│  Turn off UPS   │ ──▶  │  Turn off UPS   │
│  output breaker │      │  input breaker  │
└─────────────────┘      └─────────────────┘
                                  │
                                  ▼
                         ┌─────────────────┐
                         │ Turn off the air│
                         │   conditioner   │
                         │     breaker     │
                         └─────────────────┘
```

Figure 3-25 Shutdown procedure

NOTE:

- Before the unit is powered down, set the cooling to off in the "Setting" interface.
- After turning off the UPS input breaker, you need to press the OFF button at the front of the UPS panel to turn off UPS mode, or it will work in battery mode.

4.   Management System

4.1.   Network Switch

- The monitoring display and access controller have already connected to the network switch.
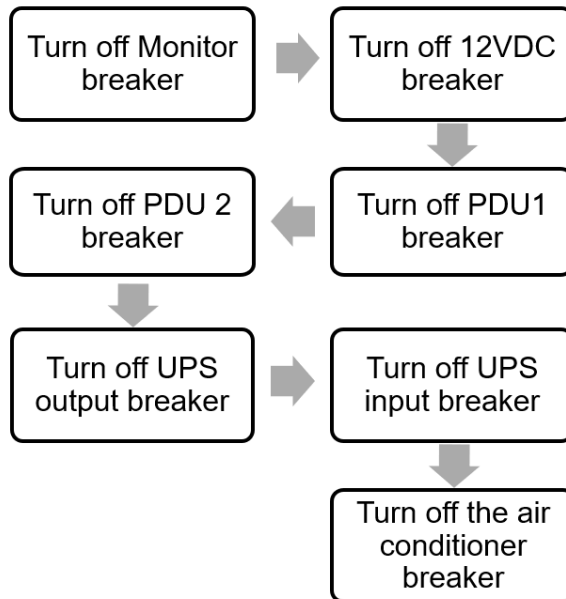- Other devices requiring communication can be connected to the network switch through CAT6.

Figure 4-1 Network switch

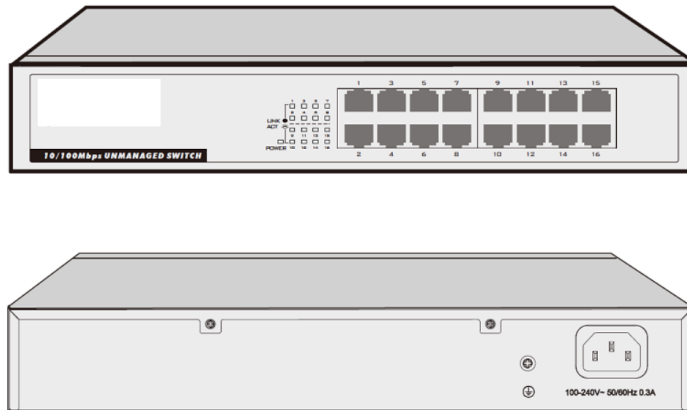## 4.2.   Management system interface

After the unit is powered on, the monitoring host(HMI) automatically starts to enter the monitoring system.
The default password to enter the "Setting" and "System" interface is "4321".
The management system also needs the password to access. It is used to log out of the management system to the android interface.
The user name is "admin", password is "12348765".

4.2.1. Home page
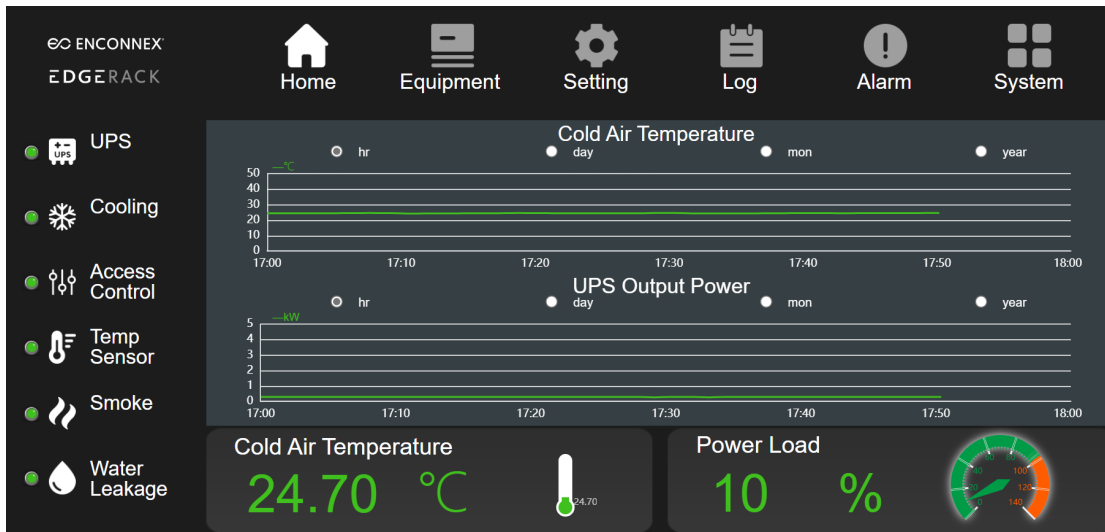
Figure 4-2 Home page

- **ENCONNEX EdgeRack**

There is the product logo on the top left of the homepage interface; clicking on the logo will pop out of the prompts entering the management system, the user's name 'admin', password' 12348765' to exit the monitoring system.

- **Home**

The toolbar is on the top; clicking each icon can enter the sub-interface. The left side of the page indicates the status of the key components such as the UPS, Cooling, Access control, Temp sensor, Smoke and Water leakage, and when it turns red, it indicates that the detection item has an alarm.

- **Curve**

The curve of the cold air temperature in the middle of the interface is used to monitor the cold channel temperature of the cabinet and can display the curve of the hour, day, month, and year.

The curve of UPS output power shows the real-time IT load and displays the curve of the hour, day, month, and year.

- **Cold Air temperature**

The bottom temperature displays the real-time cold air temperature.

- **Power Load**

The bottom percentage displays the current load rate of IT load.

4.2.2. Equipment-UPS
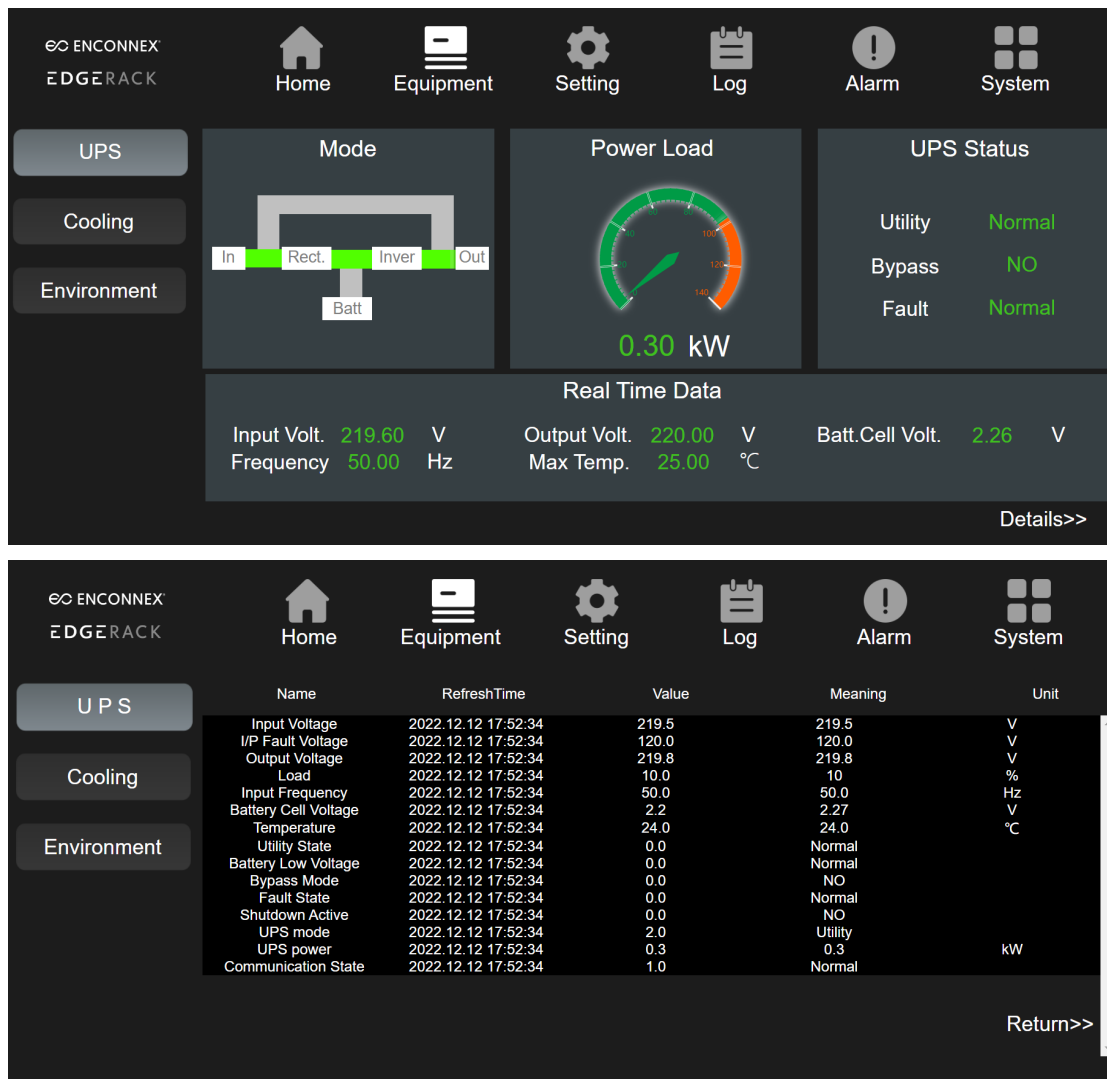
Figure 4-3 Equipment -UPS page

● **Mode**

UPS power supply mode. The power supply schematic diagram shows the current power supply mode of the unit.

● **Power Load**

Shows the current IT load, which is also the output power load of UPS.

● **UPS Status**

Shows the operating information of the UPS.

● **Real-time data**

Shows the UPS real-time parameters, such as input voltage, output voltage, battery cell voltage, frequency, and max temp.

● **Details**

Click to view all real-time parameters of the UPS.

4.2.3. Equipment-Cooling
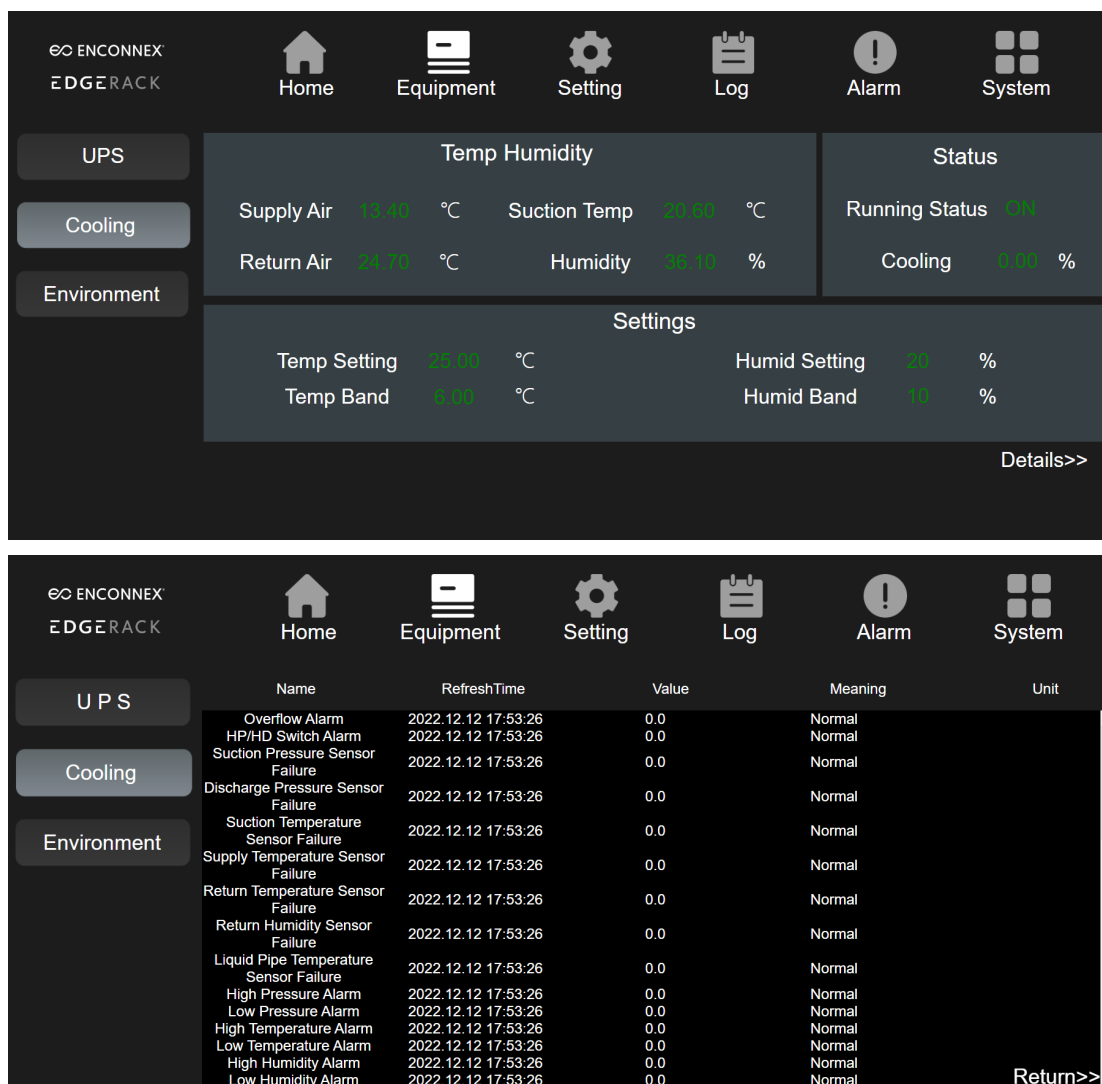
Figure 4-4 Equipment-Cooling page

- **Temp & Humidity**

"Supply Air 13.4℃" shows the real-time supply air temperature of the cooling.
"Return Air 24.7 ℃" shows the real-time return air temperature of the cooling.
"Humidity 36.1%" shows the real-time return air humidity of the cooling.
"Suction Temp 20.6 ℃" the suction temperature is detected by the temperature sensor which is on the compressor's suction pipe. It is a critical parameter to reflect the operating status of the cooling unit.

- **Status**

Shows the operating status of cooling, including operation status and the compressor output.

- **Setting**

Via this setting part, you can set some parameters according to the application situation, including Temp setting, Humidity setting, Temp band, and Humidity band.

● **Details**

Click to view all the cooling unit parameters, displaying real-time parameter values.

4.2.4. Equipment-Environment
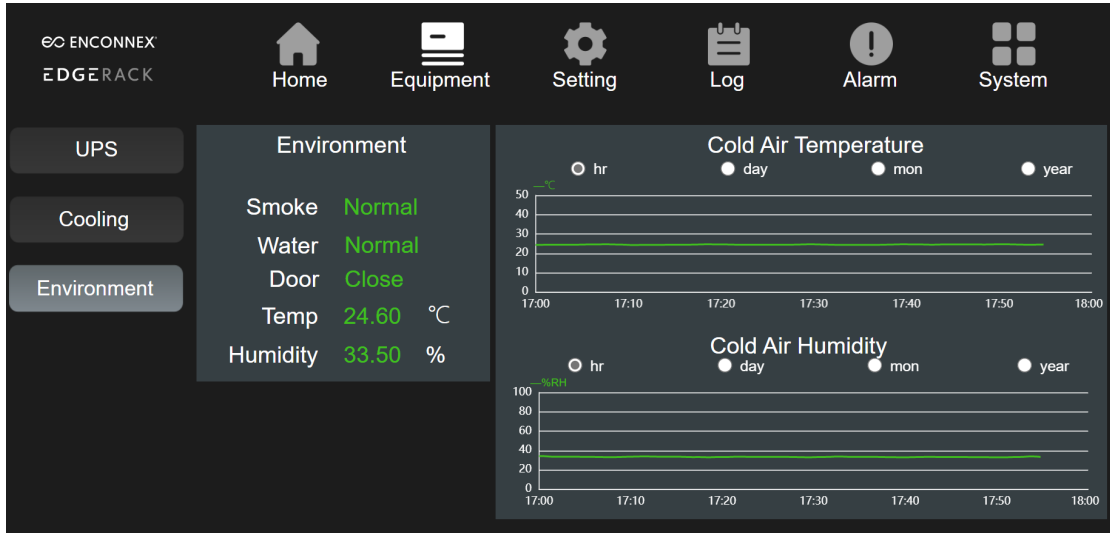
Figure 4-5 Equipment-Environment page

● **Environment**

This part shows the real-time data of temperature and humidity collected by the T/H sensor, and the status of the smoke alarm, water leakage alarm, and the cabinet door status.

● **Cold Air Temperature**

The cold air temperature data is regularly kept in the database, and the data curves of the hour, day, month, and year can be viewed.

● **Cold Air Humidity**

The cold air humidity data is regularly kept in the database, and the data curves of the hour, day, month, and year can be viewed.

4.2.5.　Setting-Environment

Figure 4-6 Setting-Environment page

To enter the "Setting" part, the default password is "4321".

This part shows the current set point; clicking on the back of the data box, the setting parameters can be changed, it will pop up the keyboard for inputting data, then click on the "Set" to complete the change. After the success setting, the interface will pop up the success of the change or set the success of the tips.

But for the "Emergency Ventilation" part, it is needed to restart the monitor for a successful setting.

● **Temp Humidity Alarm Setting**

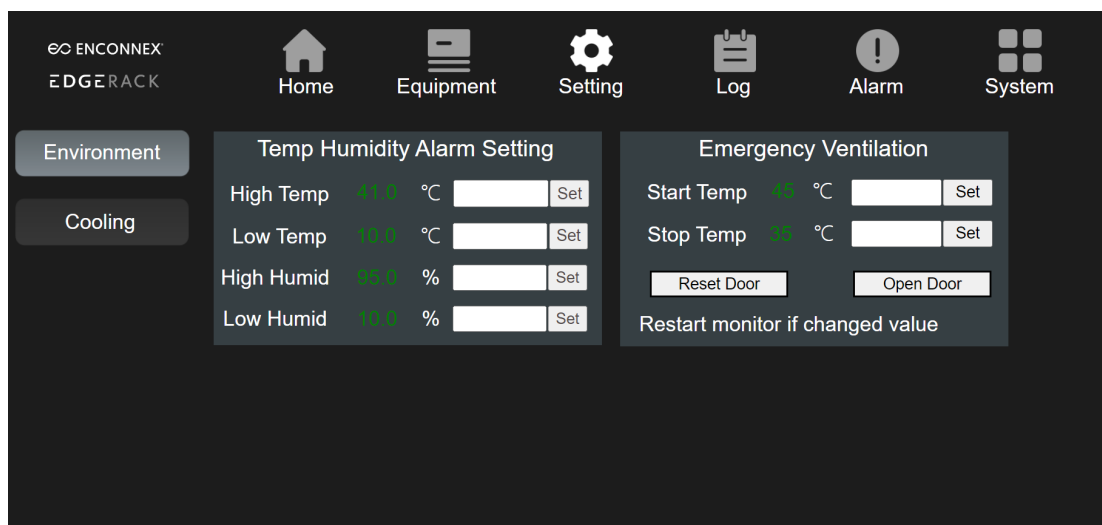"High Temp 41.0 ℃" shows the high-temperature alarm set point. When the T/H sensor located in the cold air side detects the temperature is greater than this set temperature, there will be a high-temperature alarm.

"Low Temp 10.0 ℃" shows the low-temperature alarm set point. When the T/H sensor located in the cold air side detects the temperature is less than this set temperature, it will appear as a low-temperature alarm.

"High Humid 95.0%" shows the high-humidity alarm set point. When the T/H sensor located in the cold air side detects humidity greater than this set humidity, there will be a high-humidity alarm.

"Low Humid 10.0%" shows the low-humidity alarm set point. When the T/H sensor located in the cold air side detects the humidity is less than this set humidity, there will be a low-humidity warning.

● **Emergency Ventilation**

"Start Temp 45 ℃" When the detected temperature is higher than the set temperature, the unit starts the emergency ventilation mode, and the cabinet door will automatically open.

"Stop Temp 35 ℃" When the detected temperature is lower than or equal to the set temperature, the cabinet door can be closed. However, the door needs to be closed manually.

"Reset door" If the temperature has dropped after the alarm and did not reach

the stop temperature point, you can click reset to close the door normally.
"Open door" If you need to test or check the state of the door, click on it to open the door; the magnetic power will be turned off, and the door will be open.

4.2.6.　　Setting-Cooling
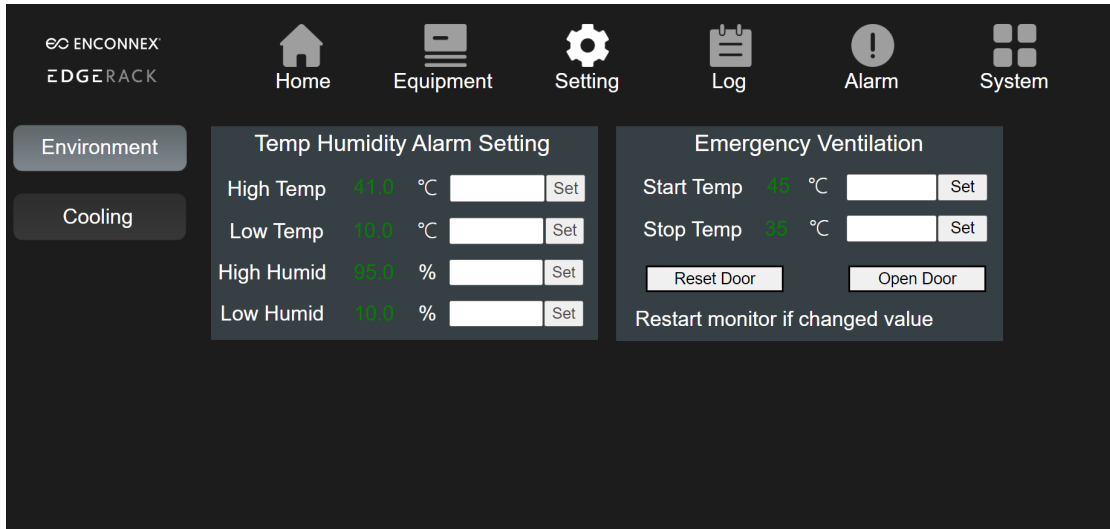
Figure 4-7 Setting-Cooling page

"ON/OFF" It is set to start and shut down the cooling unit.

Note: Cooling ON and OFF has a delay, wait for it to complete.

"Control Mode " means the temperature which controls the operation of the cooling unit. You can choose to supply air or return air.
"Fault reset" When there was the Cooling alarm, and the fault has been resolved, you can use this button to reset and cancel the alarm state.
"Fault Reset" Click here to reset when a manual reset is required in case of a cooling alarm.
"Temp Setting 25.00℃" is the temperature to control the inverter compressor and fans for operation.
"Temp Band 6.00 ℃" is the parameter that cooperates with the temperature to control the inverter compressor and fans for operation.
"Humid Setting" and "Humid band" are the parameters to control the operation of the humidifier, which is an optional component.

4.2.7.　　Log
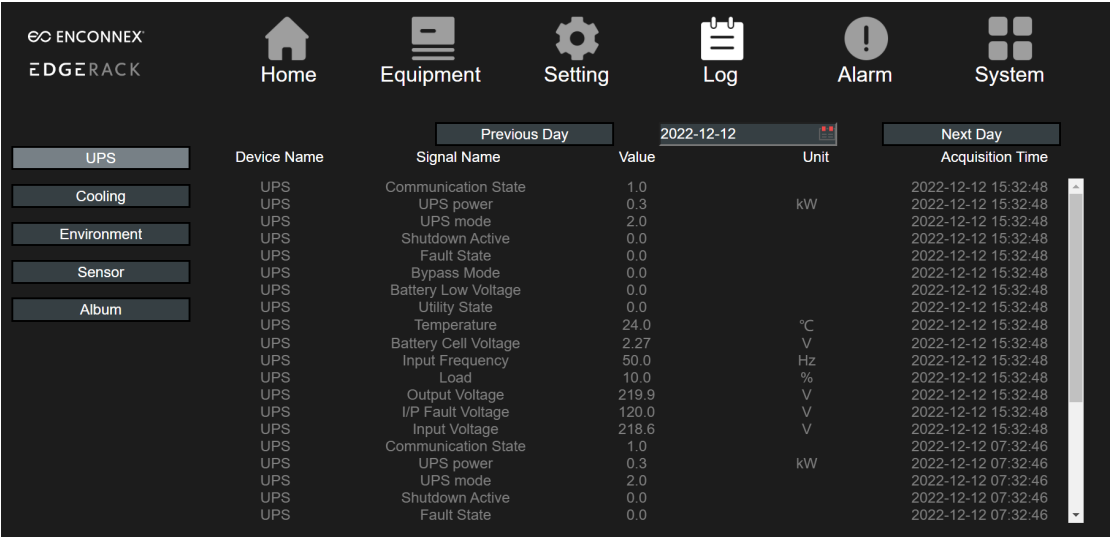
Figure 4-8 Log-UPS page

This part is the data record center for the key components such as UPS, Cooling, Environment, Sensors, and album. The pictures in the album are taken by the camera built-in to the HMI screen. The data for different components could be selected via the vertical bar on the left side.

It defaults to showing the data of the current day, and You can select the data of one day in "XXXX-XX-XX" or click "Previous Day" and "Next Day" to view the data of the previous day and the next day.

4.2.8.　　Alarm
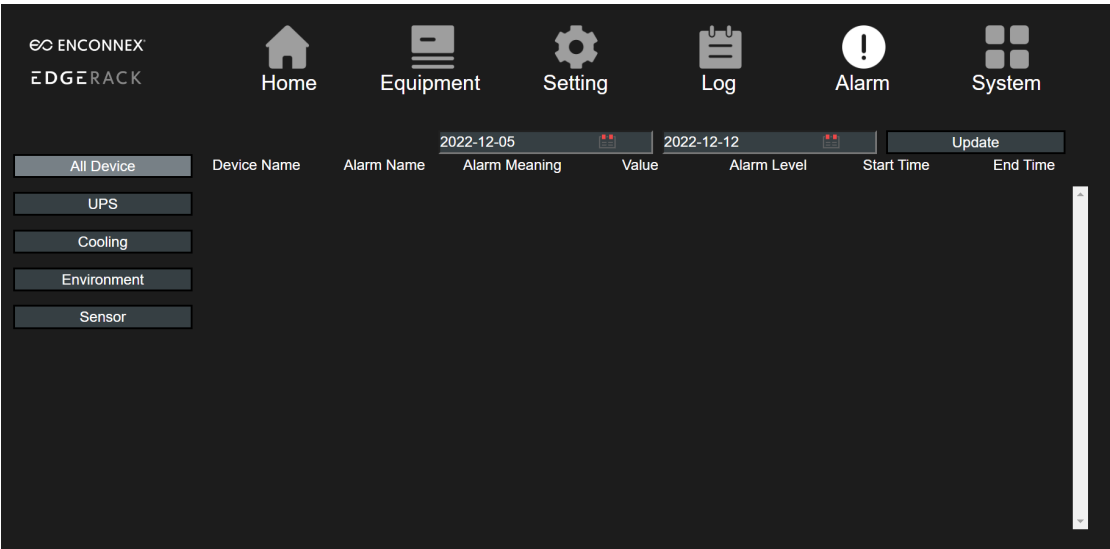
Figure 4-9 Alarm page

When the alarm icon on the toolbar is red, it indicates that the unit has an

alarm.

Click the "Alarm" icon in the toolbar to view all the alarm information; click "UPS", "Cooling", "Environment", and " Sensor" respectively to view the corresponding alarm data.

It is by default that it will automatically show the alarms for all devices in the past one week.

Select the start time "xxxx-xx-xx" and the end time "xxxx-xx-xx", and click "Update" to view the historical alarm data of the time period.

4.2.9.   System

Figure 4-10 System page

To enter the "Setting" part, the default password is "4321".

● **Password Change-Setting**

Input the old and the new passwords to modify the "Settings" interface password.

● **Password Change-System**

Input the old and the new passwords to modify the "System" interface password.

● **Delete Data and History**

Click the Delete button to delete all the history data in the "Log" interface.

● **Mail Configuration**

Set the mailbox to automatically send an email notification when the unit has an alarm and receives the alarm.

"**Outgoing**" Fill in the email server address for the email sent.

"**Port**" Fill in the email server port for the email sent.

"**Account (Send from)**" Fill in the email account for the email sent.

"**Password (Send from)**" Fill in the email password for the email sent.

"**Account (Send to)**" Click "Edit" to enter the mailbox input interface, and you can fill three mailbox accounts that will receive the alarm prompt.

"**Station Name**" Fill in the remark name of the cabinet.

4.2.10. Remote access

The management system supports remote control access, once connected to the ethernet, each computer or mobile device, which are all in the same ethernet, can remotely access the monitoring system by typing in the IP address of the EdgeRack 3P.

5. Maintenance

5.1. Cooling system maintenance

Filter

The filter is installed inside the cooling unit. If the filter is dirty, it can be removed from the top of the cooling unit, cleaned and dried before being installed in the cooling unit.
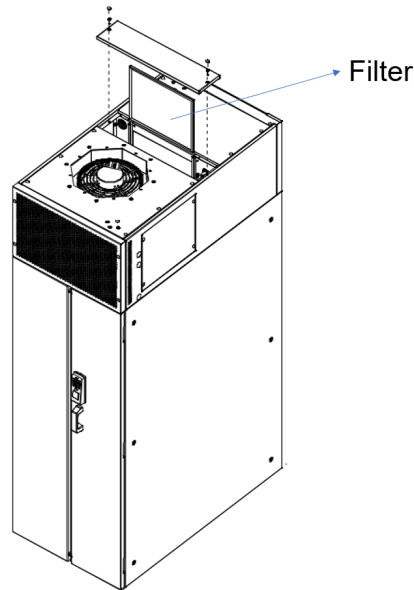
Figure 5-1 Remove the filter

Condensate water drain out

The unit is equipped with an evaporating device for condensate water, and it is necessary to regularly check whether the evaporating water tray is normal.
1) Open the access panel on the side panel of the cooling unit.
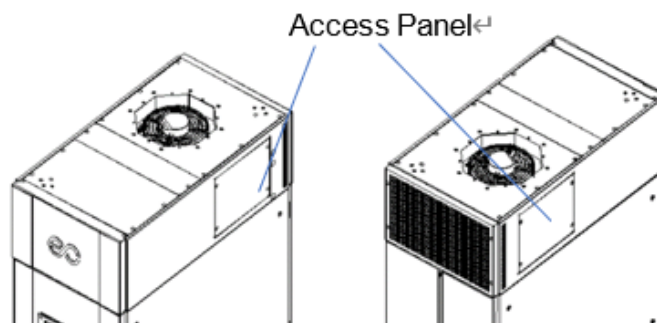
Figure 5-2 Access panel of the cooling unit
2) Check the evaporative water tray.
3) Open the hole cover at the bottom of the side panel, and then take out the drain pipe through the hole for condensate drainage.
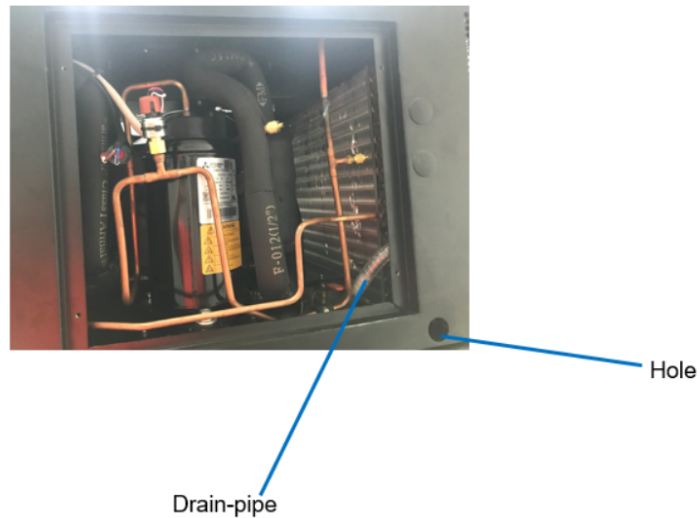
Figure 5-3 Condensate drainage diagram

5.2. UPS system maintenance

5.2.1. Check the UPS status

Check the working status of the UPS once every six months.
Check the contents include:
1) Check the UPS if it is faulty. Once there is an alarm, the fault light will be on.
2) Check if the UPS is operating in bypass mode. Usually, UPS should operate in a normal mode. If the UPS is operating in bypass mode. Please find out the reason, such as the human operation, overload, internal fault, etc.
3) Check whether the battery is in a discharge state. When the main supply is normal, the battery should not be discharged. When the UPS is operating in battery mode, find out the reason, such as mains failure, battery test, operator intervention, etc.

5.2.2. Replace the battery

If the battery warranty (3~5 years at 25°C ambient temperature) has been exceeded, the batteries must be replaced. In this case, please contact ENCONNEX customer service.

Note:
Be sure to deliver the spent battery to a recycling facility or ship it to ENCONNEX with the packing material of the replacement battery.

5.3. Alarm reference

For all of the alarms shown on the HMI, you can find the related information in

the table below.

Table 5-1 Alarm Instructions

Warning Subject	Warning Reason	Reset
Smoke	The smoke sensor detects that the smoke concentration exceeds the set value and triggers an alarm.	Manual reset is required. After the smoke concentration has been reduced below the alarm value, remove the smoke sensor cable and plug it in again.
Leakage	An alarm is triggered when the water leakage detection rope detects the water.	The alarm will automatically reset when there is no water detected.
Door	The magnetic switch detects the closing/opening state of the door, the door opening, alarms, and the door closing without alarm.	The alarm is automatically eliminated when the door is closed, and there is no other impact.
Communication Status	HMI hardware failure will cause this alarm.	Replace HMI.
High Temp	When the temperature and humidity sensor detects that the temperature exceeds the set temperature, an alarm will be triggered.	The alarm is automatically reset when the temperature is lower than the setting value.
Low Temp	An alarm will be triggered when the temperature and humidity sensor detects that the temperature is lower than the setting temperature.	The alarm is automatically reset when the temperature is higher than the setting value.
High Humidity	An alarm will be triggered when the humidity exceeds the setting value.	The alarm will be automatically reset when the humidity is lower than the setting value.

Low Humidity	An alarm will be triggered when the humidity is lower than the setting value.	The alarm will be automatically reset when the humidity is higher than the setting value.
Communication Status	The temperature and humidity sensors are not in communication.	Check the cable connection and contact Enconnex technical support.
Battery Low Voltage	UPS is not connected to the battery pack or battery voltage is low.	Check the battery connection and contact Enconnex technical support.
Bypass	Main's power is lost.	Restore mains power.
Fault State	Check if it is faulty.	Refer to the detailed instructions for troubleshooting.
Shutdown Active	The UPS is powered down.	No need to reset.
Communication Status	UPS has no communication.	Check the cable connection and contact Enconnex technical support.
Leakage/Over Water	Air conditioning overflow alarm, high condensate water level triggers the water level switch caused by poor drainage or heating failure of the evaporation device.	The alarm will automatically reset when the water is drained out and the condensate level drops below the water level switch.

HP/HD Switch Alarm	An alarm will be triggered if the discharge pressure is higher than the pressure switch value.	After the pressure returns to the set value, it will be reset automatically for 3 times. If it exceeds 3 times, it will not be reset automatically and manual reset is required on the HMI.
Suction Pressure Sensor Failure	The suction pressure sensor failed to detect the pressure which is located on the suction pipe of the compressor.	After checking the wiring or refrigerant leakage pressure returns to normal, it needs to be reset manually.
Discharge Pressure Sensor Failure	The discharge pressure sensor failed to detect the pressure which is located on the discharge pipe of the compressor.	After checking the wiring or refrigerant leakage pressure returns to normal, it needs to be reset manually.
Suction Temperature Sensor Failure	The suction temperature sensor failed to detect the temperature which is located on the suction pipe of the compressor.	After checking that the wiring or sensor replacement is proper, it needs to be reset manually.
Supply Temperature Sensor Failure	The supply temperature sensor failed to detect the temperature which is located on the cold air channel.	After checking that the wiring or sensor replacement is normal, it needs to be reset manually.
Return Temperature Sensor Failure	The return air temperature sensor failed to detect the temperature which is located on the return air inside the cooling unit.	After checking that the wiring or sensor replacement is normal, it needs to be reset manually.
Return Humidity Sensor Failure	The return air humidity sensor failed to detect the humidity which is located on the return air inside the cooling unit.	After checking that the wiring or sensor replacement is normal, it needs to be reset manually.
Liquid Pipe Temperature Sensor Failure	The sensor failed to detect the temperature which is located on the liquid pipe inside the cooling unit.	After checking that the wiring or sensor replacement is normal, it needs to be reset manually.

High Pressure Alarm	The high-pressure sensor detects that the pressure is higher than the setting pressure limit.	After the pressure returns to the set value, it will be reset automatically for 3 times. If it exceeds 3 times, it will not be reset automatically and manual reset is required on the HMI.
Low Pressure Alarm	The low-pressure sensor detects that the pressure is lower than the lower limit of the set pressure.	After the pressure returns to the set value, it will be reset automatically for 3 times. If it exceeds 3 times, it will not be reset automatically and manual reset is required on the HMI.
High Temperature Alarm	The temperature sensor detects that the temperature is higher than the setting higher temperature limit.	The alarm is automatically eliminated when the temperature is lower than the set alarm value.
Low Temperature Alarm	The temperature sensor detects that the temperature is lower than the setting for the lower temperature limit.	The alarm will be eliminated and the machine will reset automatically if the temperature is higher than the set alarm value.
High Humidity Alarm	The humidity sensor detects that the humidity exceeds the setting for the upper limit and triggers an alarm.	Detect that the humidity is lower than the recovery value, and the alarm will be eliminated automatically.
Low Humidity Alarm	The humidity sensor detects that the humidity is lower than the setting for the lower temperature limit.	The alarm is automatically eliminated when the detected humidity is higher than the recovery value.
Controller Variable Alarm	Internal fault.	Contact Enconnex technical support.
Communication Status	The cooling unit doesn't communicate.	Check the cable connection and contact Enconnex technical support.

5.4.   Troubleshooting

Below are basic troubleshooting steps. Contact Enconnex technical support for further instruction.

Table 5-2 Troubleshooting

Symptom	Possible Causes	Measures
UPS has input and no output, and the LED display of UPS does not light up.	The AC input power is not connected well.	Check if the input power cord is firmly connected to the mains.
	The AC input is connected to the UPS output.	Plug AC input power cord to AC input correctly.
Alarm code is shown as "33" on the LCD display of the UPS and the battery LED is blinking.	The external or internal battery is incorrectly connected.	Check if all batteries are connected well.
Alarm code is shown as "26" on the LCD display of the UPS and the battery LED is blinking.	Battery voltage is too high or the charger is faulty.	Contact your Enconnex technical support.
Alarm code is shown as "34" on the LCD display of the UPS and the battery LED is blinking.	Battery voltage is too low or the charger is faulty.	Contact your Enconnex technical support.
Alarm code is shown as "32" on the LCD display of the UPS and the INV or BYPASS LED is blinking.	UPS is overloaded	Remove excess loads from the UPS output.
Alarm code is shown as "29" on the LCD display of the UPS and the FAULT LED is on.	The UPS shut down automatically because a short circuit occurs on the UPS output.	Check output wiring and if connected devices are in short circuit status.
Alarm code is shown as "9" on the LCD display of the UPS and the FAULT LED is on.	Fan fault.	Contact your Enconnex technical support.
Alarm code is shown as "01", "02", "15", "16", "17", or "18" on the LCD display of UPS	A UPS internal fault has occurred.	Contact your Enconnex technical support.
Battery backup time is shorter than nominal value	Batteries are not fully charged	Charge the batteries for at least 5 hours and then check capacity. If the problem still persists, contact Enconnex

		technical support.
	Batteries are defective	Contact Enconnex technical support.
Compressor overload	Thermal load is too large.	Check the insulation and sealing conditions, remove the excess heat load. The recommended maximum load is 3.5 kW.
	a. Too much refrigerant. b. The compressor failure. c. The power supply voltage overvalue. d. Compressor connection is loose. e. Compressor connection is loose	Contact Enconnex technical support.
High pressure protection alarm.	a. High pressure protection switch failure. b. Expansion valve is too loose. c. Expansion valve failure. d. Too much refrigerant in summer. e. Condenser is dirty. f. Condensing fan does not work.	Contact Enconnex technical support.
Low pressure protection alarm.	a. Low pressure protection switch failure. b. Expansion valve opening too small. c. Expansion valve failure. d. Refrigerant leakage. Filter drier clogging. e. Evaporator frosting. f. The evaporator surface dirt. g. Air volume is too small.	Contact Enconnex technical support.
	The setting of a low-pressure protection time delay is incorrect.	Reset the low-pressure delay time on the HMI.
High temperature alarm	Upper limit of temperature setting is not reasonable.	Reset on the HMI.
	Load design is too large.	Check the room's sealed condition, and remove some heat load when necessary.
	Cooling unit is not	Contact Enconnex technical

	operating.	support.
Low temperature alarm	Lower limit temperature settings are not reasonable	Reset on the HMI.
	The abnormal situations.	Check the room's sealed condition in winter and if there's any abnormal situation.
No web interface on the login page.	Common Problem.	a. Confirm on the monitoring screen whether the monitoring IP address is correct, exit the monitoring software>Menu>System Settings>Network b. Make sure that the monitoring screen and the accessed computer are on the same network segment, and ping the monitoring host IP address on the computer to see if it can be pinged.
An alarm was generated and the email was not sent.	Common Problem.	a. Check whether the monitoring screen is connected to the Internet. b. Check if the mailbox setting is correct, the port supports 25 and 465. c. Check whether the mailbox is authorized to be used on the client

5.5.   Electrical system layout

Below is the electrical system distribution diagram.