SmartCabinet™ 2-P

User Manual

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit vertiv.com for additional assistance.

Purpose of the Document

This document applies to the SmartCabinet 2-P Solution for micro data center applications which provides an integrated, economical and efficient abilities to IT infrastructures with major benefits like space savings, quick installations and integral design. This document gives an overview of the technical specification from the user perspective. The figures used in this document are for reference only.

Please read this manual carefully before installing, maintaining, and troubleshooting.

Styling used in this Guide

The styles used in the manual will be defined as mentioned in the following table:

Situation	Description
Warning/Danger/Caution ⚠	The 'Warning/Danger/Caution' note indicates a hazardous or potentially harmful situation that can result in death or injury. It also indicates instructions that need to be adhered to, failing which may result in danger and safety issues thereby having an adverse effect on the reliability of the device and security. Even for practices not related to physical injury, the content under the Warning heading is used for precautions which need to be taken which, otherwise, could result in equipment damage, performance degradation, or interruption in service.
Note 🗒	The 'Note' section indicates additional and useful information, including tips and tweaks. It also calls attention to best practices and industry-best protocols that are standardized and help make maximum utilization of the resources at hand. Helpful information related to the mainstream stuff also comes under the Note heading helping the users get to grips with the definitions, concepts, and terminologies used in the manual.

Version History

Issue	Revision	BOM	Change
1	V1.3	---	---

Safety Precautions

- Before you begin, carefully read the instructions and precautions to reduce the occurrence of accidents. The "caution, caution, warning, danger" in the product and product manuals does not represent all safety matters that should be complied with, but only as a supplement to the various operational safety Precautions. therefore, the person responsible for the product installation, operation of the Noble Technology co., Ltd. must be strictly trained to master the correct operating methods and various safety precautions before the operation of the Equipment.
- In carrying out the operation of the Company's products and equipment, we must abide by the safety regulations of the relevant industries, strictly abide by the related equipment precautions and special safety instructions provided by Yu Wei Technology co., Ltd.

Electrical Safety

- High voltage

Some parts of the system run with high pressure, direct contact or indirect contact with moist objects, which can lead to deadly danger.

- AC Power Equipment installation, must comply with the relevant industry safety standards, the Exchange equipment installation personnel, must have high pressure, AC power and other job Qualifications.
- It is forbidden to wear wrist watches, bracelets, bracelets, rings and other conductive objects during Operation.
- Turn off the power immediately when you find that the enclosure is water or humid. When operating in humid environment, the water should be strictly prevented from entering the Equipment.
- During installation, you must put a forbidden sign on the switch and button on the Operation.

The construction operation of the High-voltage line may lead to fire or electric shock Accident. The connection and route of the AC cable must follow the laws and regulations of the local Area. Only those with high voltage and AC power can perform various high pressure Operation.

- Large leakage Current

Large contact current must be grounded before powering on the power supply.

- Tools

In the case of high voltage and alternating current operation, special tools must be used and no ordinary or self-propelled tools shall be used.

- In a thunderstorm, a strong electromagnetic field is generated in the Atmosphere. Therefore, in order to avoid lightning damage equipment, the equipment should be well grounded in Time.

- Electrostatic

- Static electricity generated by the human body can damage the electrostatic sensitive components on the circuit board, such as large-scale integrated circuits (ics). In contact with the device, hand board, circuit board, IC chip, etc., in order to prevent the human body static damage sensitive components, must wear anti-static wrist, and the other end of anti-static wrist good grounding.

- Reverse Connection

The AC input FireWire (L) and 0-wire (N) are forbidden to be reversed, otherwise the system equipment will be damaged.

- It is forbidden to wear wrist watches, bracelets, bracelets, rings and other conductive objects during Operation.
- The operation must use an insulating Tool.
- When live operation, must pay attention to the hand, wrist, arm to maintain the tense state, prevents the tool to slip the situation the tool or the human body activity amplitude is too big and appears the Accident.

- Other

Object Tip Angle:

When handling equipment by hand, wear protective gloves to prevent the cutting of the Material.

Power cable:

Verify that the cable and cable labels match the actual installation before connecting the Cables.

Lashing of signal lines:

The signal line should be separated from the strong current or high voltage lines, the binding spacing of at least 150mm.

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1 Introduction

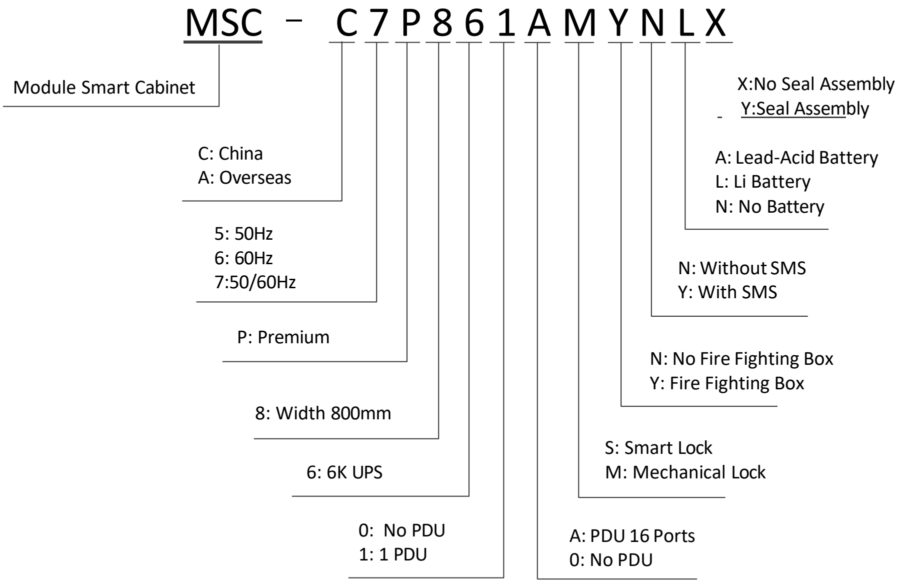
The SmartCabinet 2-P single-cabinet data center product is a cabinet-level data center solution product produced by Vertiv that houses the primary network equipment and various physical infrastructure facilities in a fully enclosed IT cabinet for network access by providing a good working environment and a reliable platform for integration. It is mainly used in EDGE application scenarios which mostly exhibit an unmonitored environment, office, wiring closet, warehousing and logistics, factory production line, and network access room to mention a few.

SmartCabinet 2-P products are used to store 19′′ cabinet hardware devices that confirm to industry standards (EIA-310-D), including servers, voice, data, Internet network equipment, etc., including closed systems and power distribution and air conditioning equipment. Centralized cooling, monitoring of the internal equipment, fully contained cold and hot aisles drastically improve the energy efficiency in small data center applications.

This chapter mainly introduces the model description, specifications, product features, appearance and components, functional components, operating conditions, environmental requirements and configuration schemes of SmartCabinet 2-P products.

1.1 Model Nomenclature

The Model Nomenclature of the SmartCabinet 2-P solution is shown in Figure 1-1.



MSC – C 7 P 8 6 1 A M Y N L X
Module Smart Cabinet
C: China
A: Overseas
5: 50Hz
6: 60Hz
7:50/60Hz
P: Premium
8: Width 800mm
6: 6K UPS
0: No PDU
1: 1 PDU
A: PDU 16 Ports
0: No PDU
S: Smart Lock
M: Mechanical Lock
N: No Fire Fighting Box
Y: Fire Fighting Box
N: Without SMS
Y: With SMS
A: Lead-Acid Battery
L: Li Battery
N: No Battery
X:No Seal Assembly
Y:Seal Assembly

Figure 1-1 Model Description

1.2 Specifications

The Specifications for the SmartCabinet 2-P can be viewed in the following Table 1-1.

Table 1-1 SmartCabinet 2-P Specifications

Parameter	Specification			
Model	China Model (mechanical lock)	China Model (Smart Lock)	Asia Pacific Model (mechanical lock)	Asia Pacific Model (Smart Lock)
Size (W × D × H)	800 mm × 1100 mm × 2000 mm			
Available space for equipment installation (1U = 44.45mm)	42U			
IT Equipment Power	≤3kW			
Voltage	P + N + PE, 220Vac / 230Vac / 240Vac			
Closed model	Hot and cold channels closed			
Colour	EG7021			
System protection class	IP54(Mechanical Lock Type Only)			
Weight	<300kg (net)			
Noise	Machine ⩽50dB (excluding the outdoor unit), an outdoor unit⩽60dB			

1.3 Features

The SmartCabinet 2-P solution is designed by integrating Vertiv’s best-in-class product offerings into one single cabinet and is best suited for application scenarios which demand quick deployment, reliability, energy efficient components, flexibility, modularity, intelligent monitoring of the entire solution, and unmanned operation to name a few of the attributes. Some of the prominent features that a SmartCabinet 2-P solution provides are mentioned below.

➢ **Energy efficient composition and with a dust & noise- proof construction**

- Fully enclosed operation (IP54 protection class) and air circulation system that ensures the cleanliness of the cabinet and also maintains the set-point temperature and humidity which prolongs the life of the IT equipment;
- Diversified best-in-class products to meet the specific needs of every application scenario;
- High efficiency and dedicated UPS sytems, Air Conditioner with Inverter technology, in conjunction with a closed cold/hot aisle arrangement, to improve the cooling efficiency of the SmartCabinet 2-P unit;
- Built-in with advanced Integrated environmental monitoring systems, emergency ventilation system, power distribution cabinets and security monitoring systems, that provide the best operating environment for IT equipment.

➢ **Highly integrated construction that provides effective floor space-saving**

- Air conditioning, UPS, power distribution unit are mounted inside the SmartCabinet 2-P unit only and a battery unit (optional if required) is mounted at the sides. As such the entire equipment occupies only the rack U space which enables a significant reduction in the required floor-space i.e., the space required for a standard rack IT equipment. All the required operating conditions and provision of on-site power supply needs to be provided by the customer.

- The air conditioning units, UPS systems, power distribution units (PMB) have a modular design that can be further integrated by an add-as-you-grow architecture.

➢ **Quick delivery with a rapid deployment**

- Once the SmartCabinet 2-P unit is delivered to the site location and positioned in the pre-designated place, it should take about one hour to build the entire unit and the entire day to boot and start-up the system.

➢ **Intelligent monitoring that facilitates unattended operational capability**

- Integrated environmental monitoring, equipment monitoring, alarm linkage intelligent control functions, provides centralized monitoring platform for managing the operations of entire SmartCabinet 2-P unit;
- A large 9" LCD display, with background Web pages and mobile APP, to achieve multi-directional monitoring system, server room operational information at any time;
- The SmartCabinet 2-P is equipped with a security system and an optional smart lock feature that ensures safety of the IT equipment inside the SmartCabinet 2-P unit;
- Also equipped is a fire protection system and optional fire enclosures to prevent any data center fire hazard.

1.4 Appearance and components

Product appearance SmartCabinet 2-P shown in Figure 1-2.

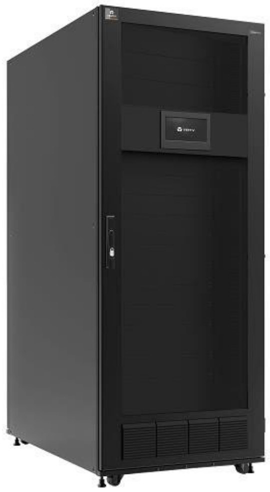
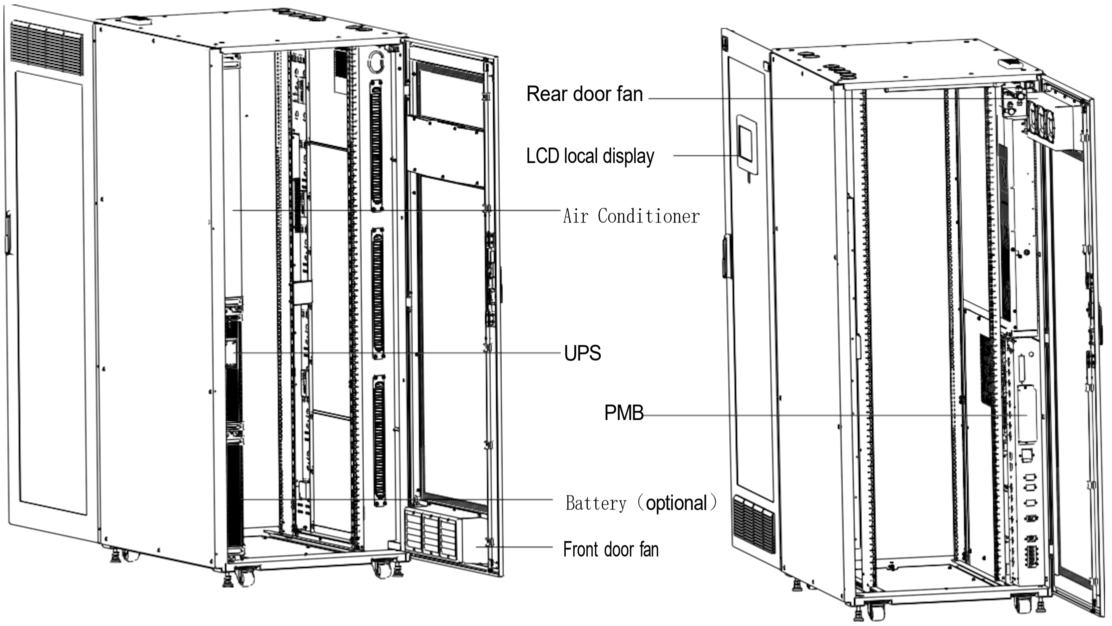


Figure 1-2 Appearance SmartCabinet 2-P

1.5 Features

SmartCabinet 2-P product mainly includes a cabinet structure, Power Distribution Units (PMB), UPS units, Air Conditioning Units, Ventilation Emergency system, Monitoring system, the LCD display and other local features. The system components are shown in Figure 1-3 below, the system functions shown in Table 1-2 .



(A) front side *(b) side of the rear door*

Figure 1-3 System components

The SmartCabinet 2-P system functions are shown in Table 1-2 below.

Table 1-2 SmartCabinet 2-P system functions

System Category	Component	Primary Objective	Features
Cabinet support system	/	For housing 19 "rack hardware industry standard (EIA-310-E), including servers, voice, data, the Internet network equipment and other equipment	Entire rack closed operating system, maintaining the system clean and dust-free, dustproof and waterproof (IP54), energy noise (system noise <50dB)
Supply and distribution system	PMB (Power Management Unit)	Power distribution, surge suppression	A method of providing for the SmartCabinet 2-P AC and DC power supply systems and C class lightning protection module, centralized management of the entire power supply and distribution system, comprising one input multiple-output control function, easy to operate, simple to use. Details in annex II.
	UPS and battery	powered by	High-quality, high-power input available for IT equipment
	PDU (16 bits) (optional)	power distribution	PDUs with Switch type, an output port may be intelligent switch, power input and output parameters detected

System Category	Component	Primary Objective	Features
The air conditioning system	Air conditioning	Active cooling of the electronic device cabinet	Small precision environmental control system that uses advanced inverter technology, designed for cooling electronic devices designed, high energy efficiency ratio, adjusted automatically to maintain homeostasis of the cabinet IT equipment safe and reliable operation.
	Emergency ventilation system	Prevent local temperature cabinet	Over-temperature inside the cabinet, air conditioning down, abnormal emergency equipment from the start, to avoid running the risk of high temperature equipment cabinet. When the system is operating normally closed emergency ventilation components to ensure the overall system environment within a sealed, air-conditioned to ensure efficient cooling.
Monitoring and management system	LCD display panel	Local display and control functions	A method of providing power cabinet, environmental monitoring intelligent management system that supports Plug and Play Vertiv smart sensor modules, providing various types of equipment, alarm notification state of the environment, to provide users with integrated access Web pages and local display and control functions.
	Sensor	Environmental quantity, door status acquisition	
Optional safety system (Optional)	Smart Lock	Ensure the safety of IT equipment in the cabinet, open the door to prevent malicious.	For supporting local ID cards, keys to open the door; access control smart recording historical events, can not close a timeout alarm; support remote to open the door.
Fire Fighting System (Optional)	Fire subrack	Providing fault, alarm, and other alarms blow.	Fire attached to the subrack within the system, has a wealth of alarms notify operation instruction, you can access the monitoring platform.

1.6 Environmental requirements

1.6.1 Operating conditions

Local SmartCabinet 2-P product easy installation location away from heat sparks, direct sunlight, corrosive gases, and should be no room within the organic solvent. Operating conditions shown in Table 1-3.

Table 1-3 Operating conditions

Item	Requirement
Installation location	Need to ensure that the installation site is horizontally levelled; Space is not less than 2400mm; Indoor and outdoor air-conditioning machine maximum equivalent horizontal range: 20m; altitude difference of ΔH: -5m ≤ ΔH ≤ 15m.
Scenes to be used	In the computer room or office, the distance from the front/rear door to the wall or other obstacles is larger than 1.0m The clearance among the room, office areas, front/rear doors, the wall or obstacles should be greater than 1.0m.
Ambient temperature	Indoor: 0°C ~ 40 °C
	Air conditioner outdoor unit : - 15°C ~ + 45°C
Relative Humidity	Inside the room: ≤ 90% RH, non-condensing
Altitude	Above 1000m, derating needs to be considered on the UPS rating and Air conditioning capacity
Rated operating voltage	L + N + PE, 220Vac / 230Vac / 240Vac

- *During operation in high temperature and high humidity environments, condensate water may appear on the external surface of the front glass door and display panel; however, this is a normal phenomenon and doesn’t affect the operations or usage.*
- *Derating is required for altitudes above 1000m. For the UPS, the altitude should be less than 1500m, derating is required for altitude above 1500m with reference to local standards. For additional information please refer Liebert® ITA2 6kVA～20kVA UPS User Manual and Liebert® ITA 6kVA UPS User Manual*

1.6.2 Storage Environment

SmartCabinet 2-P product storage environment is mentioned in the Table 1-4 below.

Table 1-4 Storage Environment

Item	Requirement
Storage Environment	Room, clean (no dust)
Environment humidity	≤95% (40°C) RH
Ambient temperature	-40 °C ~ + 70 °C

1.7 Space

There must be sufficient space provision to install and service/maintain the SmartCabinet 2-P unit. The below figure shows the space required on the front side and the rear side of the SmartCabinet 2-P unit.

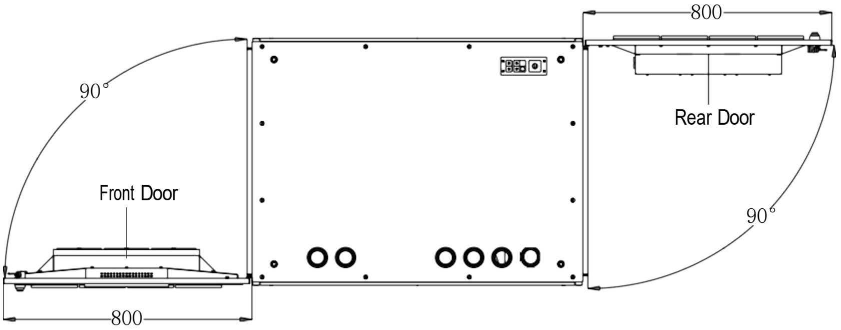

800
90°
Rear Door
Front Door
90°
800

Figure 1-4 Before opening the enclosure, the space required for the rear door (plan view, unit: mm)

SmartCabient 2-P model product space requirements inside the room where it is to be installed is mentioned in the below figure

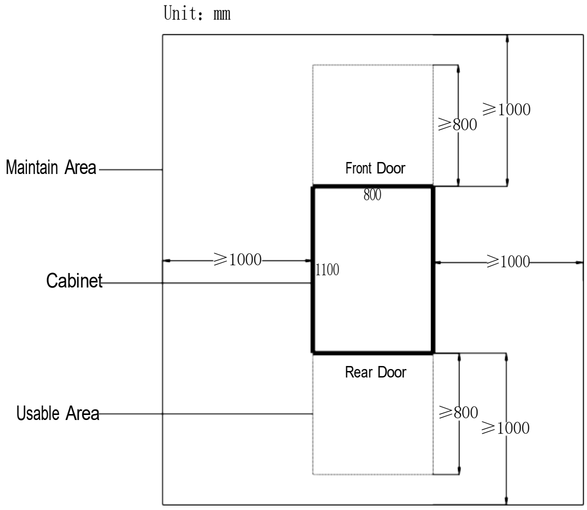

Unit: mm
≥800
≥1000
Maintain Area
Front Door
800
≥1000
Cabinet
1100
≥1000
Rear Door
Usable Area
≥800
≥1000

Figure 1-5 Model space requirements

1.8 Load-bearing

The SmartCabinet 2-P solution is a heavy equipment and therefore, the weight bearing capacity of the floor of the computer room must be taken into consideration.

However, during installation, the weight bearing capacity of the floor should also be estimated based on the total weight of the cabinet which also includes the installed equipment.

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

2 Installation

The Installation process consists of the following procedures, namely-

- Pre-installation
- Site Preparation
- Installation

2.1 Pre-Installation

Preparation before installation:

This chapter describes the preparatory work before the installation for the SmartCabinet 2-P unit that includes installation tools, spare parts, accessories shipping, handling, unpacking, inspection, installation considerations and requirements of the server room.

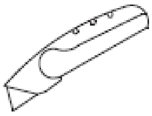
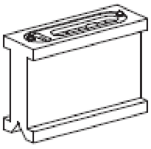
Prior to installation, some aspects need to be taken into consideration from the safety point of view.

- *The components of the SmartCabinet 2-P containment are large and heavy. Therefore, there may be a risk when the containment collapses. The collapse may result in physical injury, fatality, and damage to the equipment.*
- *Read all the guides pertaining to the SmartCabinet 2-P system before unpacking, moving, or placing the components. Read the labels on the SmartCabinet 2-P unit carefully to understand the safety measures prior to handling the containment.*
- *The center of gravity of SmartCabinet 2-P is inclined a bit forward, therefore, during the shifting process adjust the bearing position of the forklift or hand pallet truck.*
- *The sharp edge, sharp angle of the object, and bare buckle can result in severe injury. Therefore, only trained and qualified personnel must be allowed to install, maintain, and operate the unit. Wear safety shoes, recommended helmets, gloves, shoes, and glasses before moving the components and functional parts, removing the packaging of the containment, or installation.*
- *The cabinet may be too high to pass through the door together with the pallet. Verify the height of the cabinet and the door followed by confirming the clearance before moving the equipment; this will help prevent damage to the equipment and the building.*
- *Close all the doors while lifting the equipment using an electric forklift or a pallet.*

2.1.1 Installation tools

The following Table 2-1 shows the usual tools and utilities which are quite handy in the installation process.

Table 2-1 – Tools and Utilities

Name	Drawing	Name	Drawing
Electric hand drill		Adjustable wrench	
Slotted screwdriver		Cross head screwdriver	
Stepladder		Forklift	
Drill		Wire cutting pliers	
Claw hammer		Diagonal cutting pliers	
Insulating shoes		Antistatic gloves	
Electrician knife		Cable ties	
Insulating tape		Insulating gloves	
Crimping pliers		Heat shrinkable tube	
Insulated torque wrench		Torque screwdriver	
Multimeter		Clip-on ammeter	
Utility Knife		Gradienter	
Allen key			

Apart from this, another accessory that is quite useful in the pre-installation and installation procedures is the Floating nut hook.

The appearance of the floating nut hook is shown in Figure 2-1

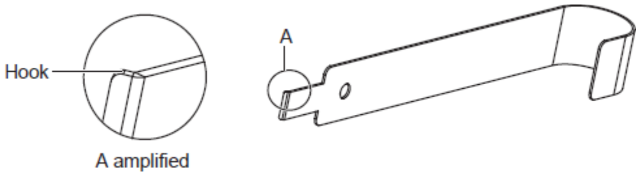

Hook
A amplified
A

Figure 2-1 Floating nut hook

The floating nut hook is used to install the floating nut.

Following are the steps to be followed for the installation of the floating nut:

- Insert one fastener of the floating nut into the square hole of the vertical mounting rails, as shown in Figure 2-2

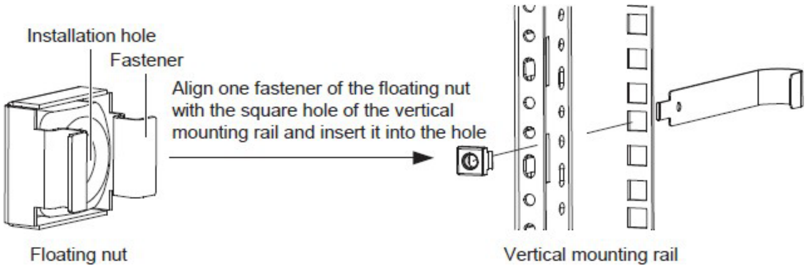

Installation hole
Fastener
Align one fastener of the floating nut with the square hole of the vertical mounting rail and insert it into the hole
Floating nut
Vertical mounting rail

Figure 2-2 Schematic diagram for installing floating nut

The floating nut should be inserted into the square hole in the horizontal direction, i.e. the fasteners on both sides of the floating nut should touch the left and right sides of the square hole. The fasteners should not touch the top and bottom of the square hole.

- Lead the floating nut through the square hole. Hitch the other fastener of the floating nut and pull it out to fix the fastener to the square hole completely as shown in Figure 2-3.

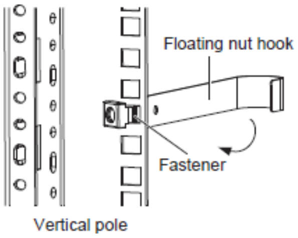

Floating nut hook
Fastener
Vertical pole

Figure 2-3 Schematic diagram for installing floating nut

2.1.2 Fittings

The utilities used for fittings are shown in the following Figure 2-4

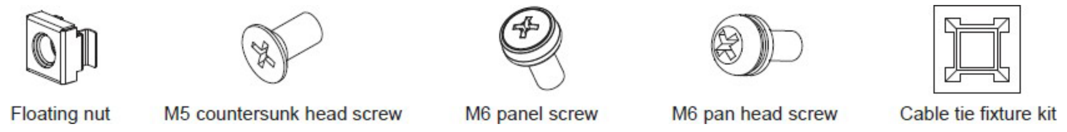


Figure 2-4 Fittings

The fitting nuts and their usage are shown in the following Table 2-2

Table 2-2 Usage of Fitting Utilities

Fitting Utility	Usage
Floating Nut	Used together with the M6 screw, used to install the parts in the cabinet
M6 Panel screw	Used to install the power distribution unit, monitoring system, & User equipment
M6 Pan head screw	Used to connect and fix the frame
Cable tie Fixture kit	Used to fix & bind the cables

2.1.3 Accessories

The following Table 2-3 displays the various accessories used in the shipping of SmartCabinet 2 machine:

Table 2-3 Model Shipping Accessories

Sl. No.	Product Name	Quantity	Use	Note	
1	Cable Tie（100mm）	30	For strapping Cables	Standard	Accessory Box 1
2	Cable Tie（295mm）	30	For strapping Cables		
3	Cable Tie with fixed seat	10	For fixing the strapping cable		
4	OT Terminal	4	Used in total input cable head crimping		
5	Floating nuts	30	Used in conjunction with M6 screws for the installation of user parts in cabinets		
6	M6 Crown Screws	30	For distribution, monitoring and installation of user equipment		
7	Floating Nut buckle Hand	1	For Mounting floating nuts		
8	Certificate	1	Customer Usage		
9	Cross Groove hexagonal head combination screws M5*12	6	Installation and fixing of the user's optional battery		
10	Conditioning Wrapping Belt	2m	Used in Air conditioning indoor machine liquid pipe and trachea head		
11	Tapered Seals M63	3	Customer Cable (Used in conjunction with wave tubes）		

12	Wave Tube (Outside 54.5/Within 48mm)	3*0.5m	Customer Cable (Used in conjunction with tapered seals）		
13	User Manual-Quick Installation Guide	1	User on-site installation guidance document		
14	Battery Cable	1 set	Wiring for optional batteries	Matching	
15	Hanging ear	1 set	User installs optional battery		
16	Cross Groove sinking head screws M4*8	16	The user fixes the hanging ear of the optional battery		
17	Groove hexagonal head combination screws M5*12	7	Installation and fixing of the user's optional battery		
18	Fire Box Cable	1 set	For connecting Fire Systems		
19	Modem（Modem）	1	Alert users to System information		
20	Modem Connector Cable	1	Used to connect SMS cats		
21	Copper pipe Ø6.35	1	For connecting air conditioning indoor machines and outdoor machines	Accessory Box 2	
22	Copper Pipe Ø12.7	1	For connecting air conditioning indoor machines and outdoor machines		
23	Connector Cable	1	For air conditioning indoor machines and outdoor inter-machine communication		
24	1U Plastic Blind Plate（1 Box）	10	U space for populating devices that are not installed	Accessory Box 3	
25	1UPlastic Blind Plate（1 Box）	10	U space for populating devices that are not installed	Accessory Box 4	
26	External Inlet Sealing components（Matching）	1 case	Optional when the customer's cross-line capacity is greater than 120	Accessory Box 5	
27	Key	2	For cabinet door opening	Attachment outside the cabinet	
28	Access Card (Optional)	2	For cabinet door opening	Attachment outside the cabinet	

2.1.4 Self Prepared Materials

The cables routed from the room to the SmartCabinet 2-P and the circuit breakers must be prepared at the customer site or are to be obtained by the customer; the specifications for the same are given in the Table 2-4.

Table 2-4 Self-Prepared Materials

Parts	Specifications
External Circuit Breaker	1P 50A level isolation switch, load switch or air switch
Input power supply cables	Cable CSA: 6mm² (ambient temperature: 25°C)
System Grounding cables	Yellow / Green cable CSA: 6mm² (ambient temperature: 25°C)
Network management cables	CAT6

2.2 Equipment handling, unpacking, inspection

2.2.1 Transportation & Movement

When it comes to transporting the system, railroad is the most preferable choice. However, if railroad transportation is not possible, then the truck transport option is an optimal choice. One precaution is to choose roads that do not have too many bumps and if any, avoid it as much as possible.

The appearance of the entire package, inclusive of components is shown in Figure 2-5

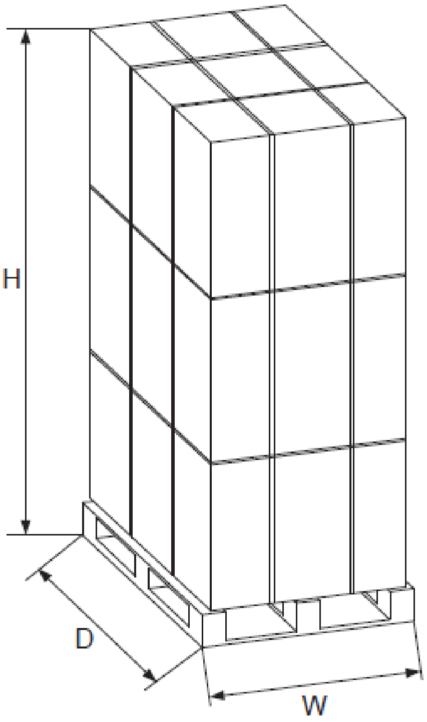


Figure 2-5 Package inclusive of components

The dimensions of the package are depicted in the following *Table 2-5*

Table 2-5 – Dimensions of the indoor unit

Item	Package	Size range (unit: mm)			Gross weight (unit: kg)
		H	W	D	
Packaged air conditioner indoor machine	Wooden	2233	966	1316	<440kg

The cabinet, closed frames, and the AC indoor unit need to be moved to the vicinity of the installation site. SmartCabinet 2-P, being an 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 2-6 depicts the schematic diagram of a hand pallet truck and an electric forklift.

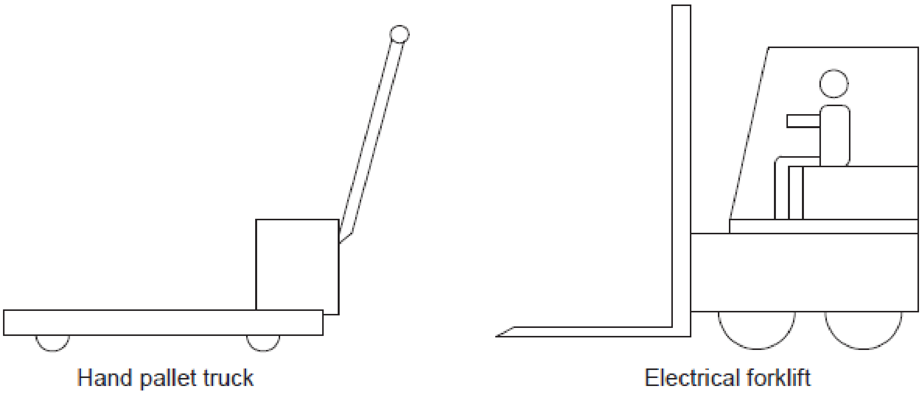


Figure 2-6 Hand Pallet Truck & an Electric Forklift

If a hand pallet truck or an electric forklift truck is used, 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 depicted in Figure 2-7.

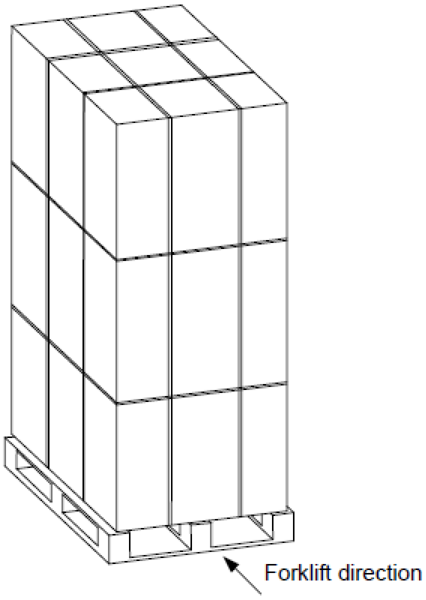


Figure 2-7 Forklift Direction

While moving the package, the obliquity has to be maintained at an angle of 80-100°.

Figure 2-8 depicts the 80° to 100° obliquity that is suitable to move the cabinet to the vicinity of the desired location.

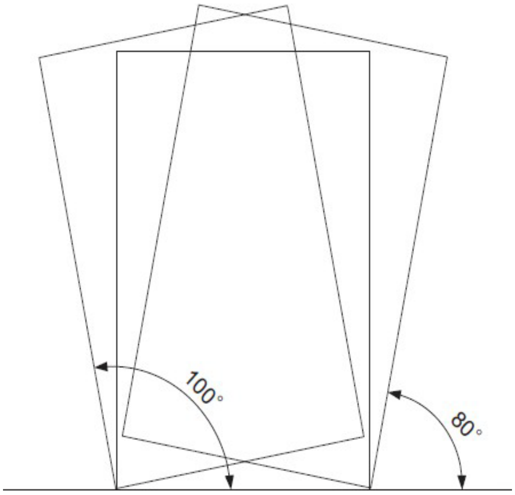


Figure 2-8 Carrying obliquity

- *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. This is done so 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 match with that of the equipment.*

2.2.2 Unpacking

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

Following are the steps and procedures that are to be observed during the unpacking process:

1) Remove the packing materials
    - Move the equipment of the assembled package to an open, firm, and leveled ground.
    - Cut off the packing strip on the package paper box using a utility knife followed by removing the package paper box of the cabinet.
    - Remove the extension film on the cabinet using a utility knife along with the package materials in the baggage.

2) Remove the feet pressure plate
    - Remove the fixing screws on the pallet using a sleeve or movable wrench followed by removing the pressure plate as shown in Figure 2-9.

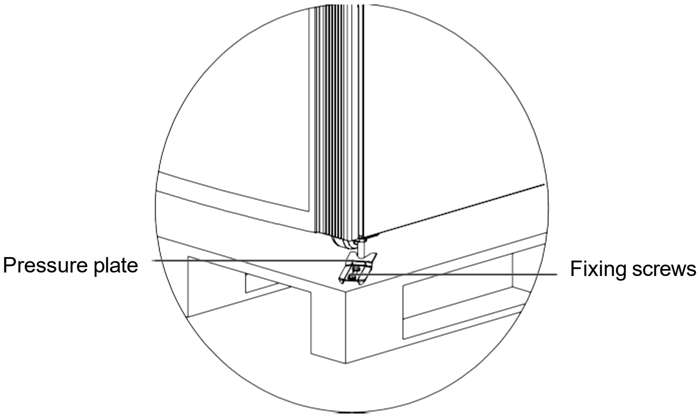

Pressure plate
Fixing screws

Figure 2-9 Removing the Feet Pressure plate

3) Remove the pallet
   - Loosen the fixing nuts on the 4 feet bolts to raise the feet and subsequently the 4 castors will bear the weight.
   - Place a slope in front of the front or rear door and connect it with the pallet as shown in Figure 2-0.
   - Push the cabinet slowly from the pallet down to the ground along the slope.
   - Place the cabinet in the maintained position and adjust the feet fixing nuts till the cabinet is level.

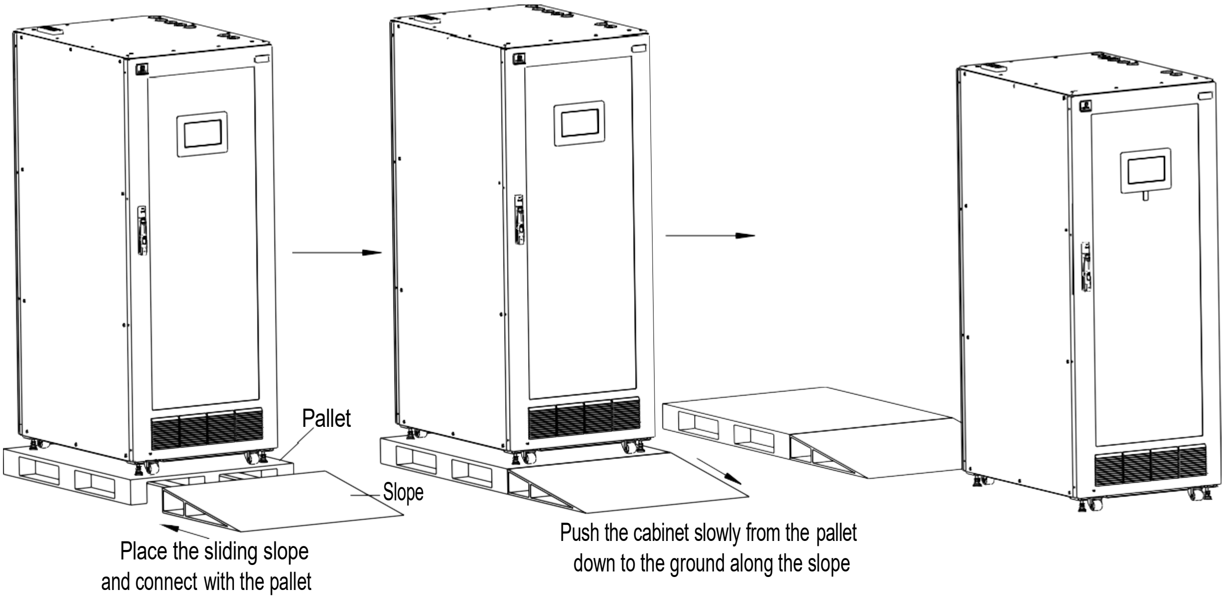

Pallet
Slope
Place the sliding slope and connect with the pallet
Push the cabinet slowly from the pallet down to the ground along the slope

Figure 2-10 Removing the Pallet

- *The slope for removing the pallet has to be created at the customer site by the customer. Any device similar to the slope can also be used but it is solely to be done by the customer at the customer site.*

- *The whole cabinet is quite heavy; so precautions need to be taken while pushing the pallet to the ground along the slope to prevent injury or damage to the equipment in case of an accidental collapse.*
- *It is suggested to add weigh in the cabinet during moving, to prevent overturning.*

2.2.3 Inspection

- Moving forward, check the system fittings and its components against the packing list to ensure that everything is in place and the assembly is intact.
- If any parts or components are missing or damaged, immediately report to the carrier about the same. If hidden damages are observed, then contact the local offices of that carrier as well as Vertiv at the earliest.
- Pay attention to the installation requirements of the indoor and outdoor units while installing the Air conditioning unit.
- Close all the doors while lifting the equipment using an electric forklift or a pallet.
- For the unit with an integrated condenser, ensure that there is sufficient space for the air outlet and air inlet of the cabinet.

2.3 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.

Following are some safety measures that must be observed prior to installation of the SmartCabinet 2-P system:

- *Before installation, ensure that the installation site is plane. 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.*

Following Figure 2-11 is a flowchart of the installation procedure:

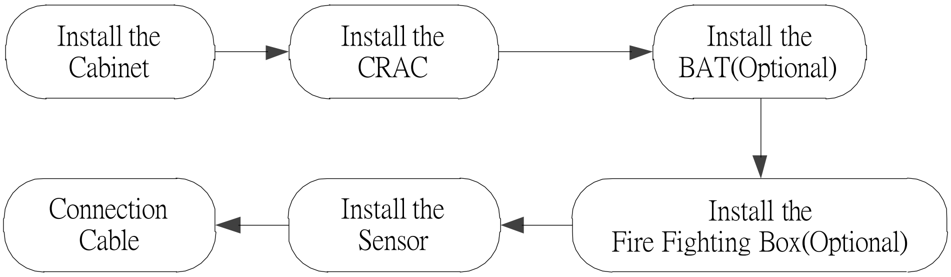


Figure 2-11 Flowchart of the installation process

2.3.1 Installing the cabinet

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

1) Place the Cabinet of the machine in a predetermined position and tighten the fastening nut on the four foot screws on the cabinet piece of the machine clockwise with the active wrench, as shown in Figure 2-2.

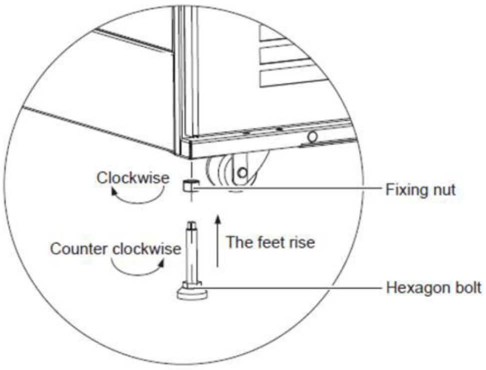


Figure 2-12 Tightening the fixing nut

2) Rotate the hexagon head bolt on the bottom of the feet clockwise or counter-clockwise till the feet rise or drop to an optimal position. Use a gradienter to ascertain that the cabinet is horizontal.

3) Tighten the fixing nuts (as shown in Figure 2-12) on the feet bolts counter-clockwise following which the cabinet adjustment is completed.

Alternate method to adjust the height of the levelling feet:

Adjust the position of four cabinet feet adjustment hole with the floor crossmember. When adjusting the foot, ensure the sealing cap is removed from the hole. Then using an Allen wrench (key) at the hexagonal inner bore of the units, rotate the allen wrench counterclockwise / clockwise to raise / lower the position of the cabinet to the desired horizontal level using a gradienter. The same process is mentioned in Figure 2-13 below.

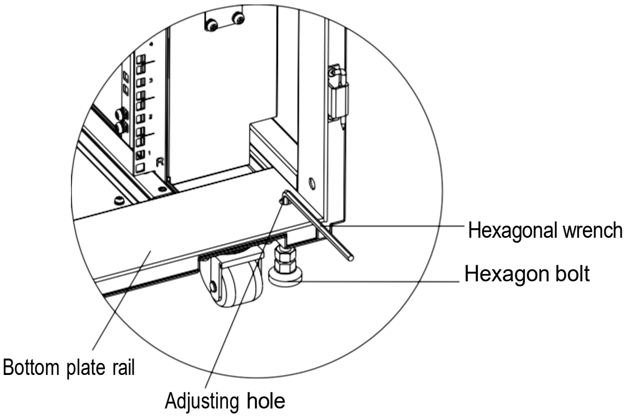


Figure 2-13 Allen wrench adjustment

2.3.2 Installing the AC components for the 600mm Standard unit

The AC components comprise an AC Indoor unit and an outdoor unit. The AC Indoor unit is pre-installed in the cabinet prior to delivery. The AC outdoor unit is placed inside the cabinet and delivered with the cabinet. The outdoor unit needs to be placed and installed appropriately wherein the copper pipes are connected between the indoor unit and the outdoor unit along with the other cables.

- Removing and placing the Outdoor unit

Following are the steps that need to be observed while removing and placing the outdoor unit:

1) Remove the 4 screws on the press strips(mound layer) of the outdoor unit followed by removing the press strips as shown in Figure 2-14.

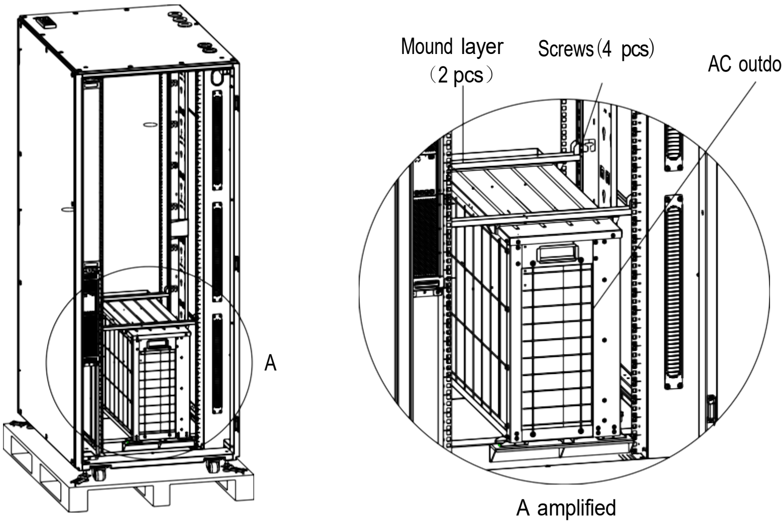


Figure 2-14 Removing the press strips of outdoor unit

- *The two metal press strips on the top of the outdoor unit can be used as horizontal cable organizers at the backend of the cabinet.*

2) Remove the 4 screws on the four corners of the outdoor unit following which the AC outdoor unit can be carried out. Figure 2- depicts the location of the 4 screws on the four corners of the outdoor unit.

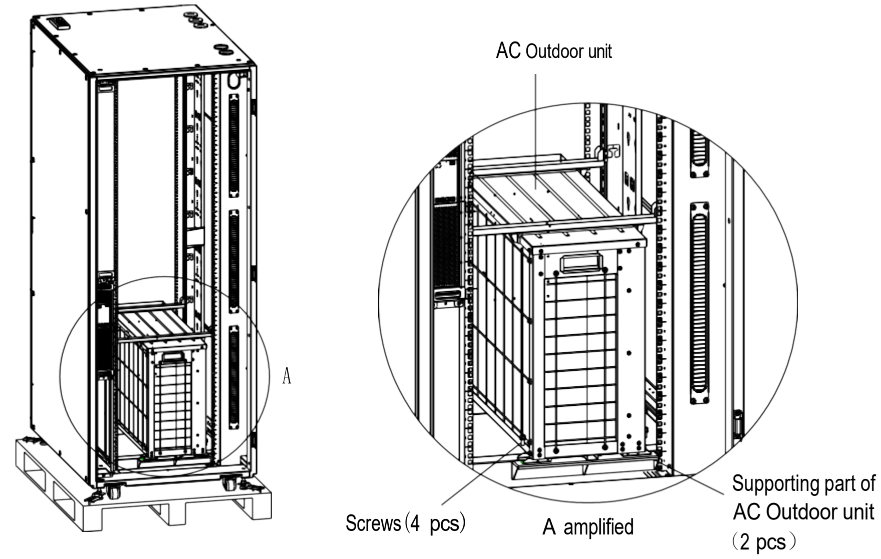

A
AC Outdoor unit
Screws（4 pcs）
A amplified
Supporting part of
AC Outdoor unit
（2 pcs）

Figure 2-15 Removing the fixing screws of outdoor unit

- *The two 1U-height supporting parts located on the lower part of the AC outdoor unit can be used as dummy plates in the cold aisle of the cabinet.*

- Installing the AC outdoor unit

The AC outdoor unit must be installed vertically. The outdoor unit can either be installed higher than the indoor unit or lower than the indoor unit.

Figure 2-16 shows the scenario where the outdoor unit is installed higher than the indoor unit:

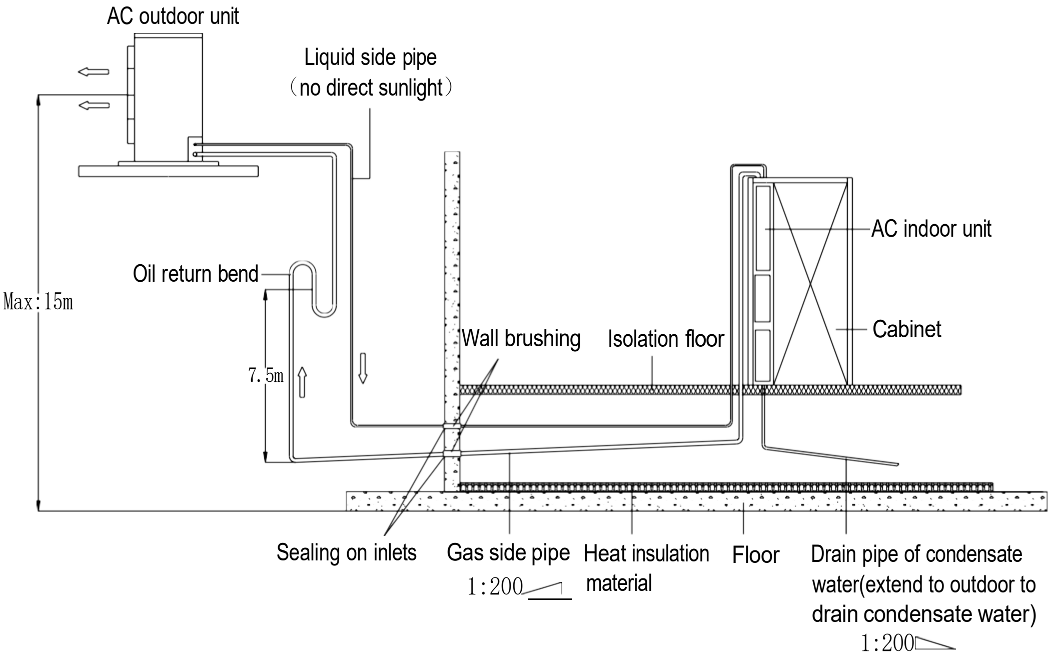

AC outdoor unit
Liquid side pipe
（no direct sunlight）
AC indoor unit
Oil return bend
Max:15m
Wall brushing
Isolation floor
Cabinet
7.5m
Sealing on inlets
Gas side pipe
1:200
Heat insulation
material
Floor
Drain pipe of condensate
water(extend to outdoor to
drain condensate water)
1:200

Figure 2-16 The Outdoor unit is installed higher than the indoor unit

Figure 2- shows the scenario where the outdoor unit is installed lower than the indoor unit:

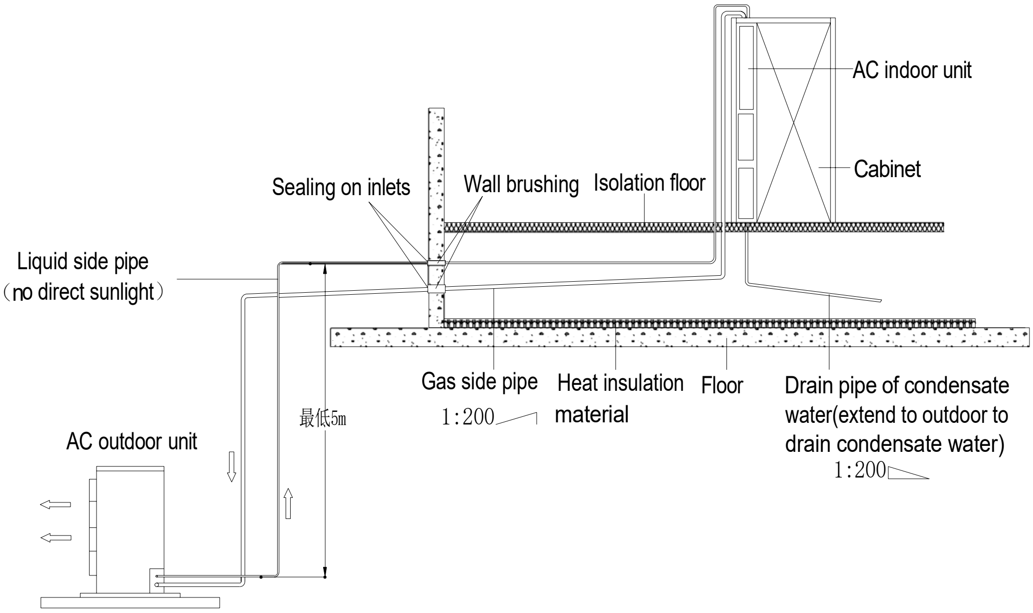

AC indoor unit
Cabinet
Sealing on inlets
Wall brushing
Isolation floor
Liquid side pipe
（no direct sunlight）
Gas side pipe
1:200
Heat insulation material
Floor
Drain pipe of condensate water(extend to outdoor to drain condensate water)
1:200
最低5m
AC outdoor unit

Figure 2-17 The Outdoor unit is installed lower than the indoor unit

Following are the steps that need to be observed for the regular installation of the outdoor unit:

1) Place the outdoor unit on the base
2) Use expansion bolts to fix the outdoor unit on the base.

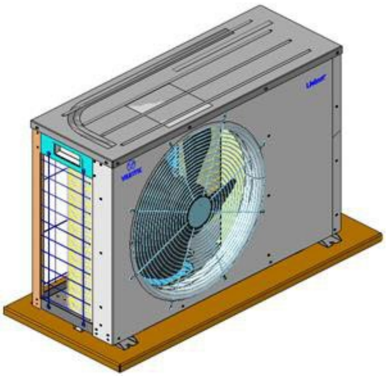


Figure 2-18 Outdoor machine installation Diagram

If there are multiple outdoor units, they need to be placed on top of the other. The method to implement placement of the outdoor units on top of the other is shown in Figure 2-19.

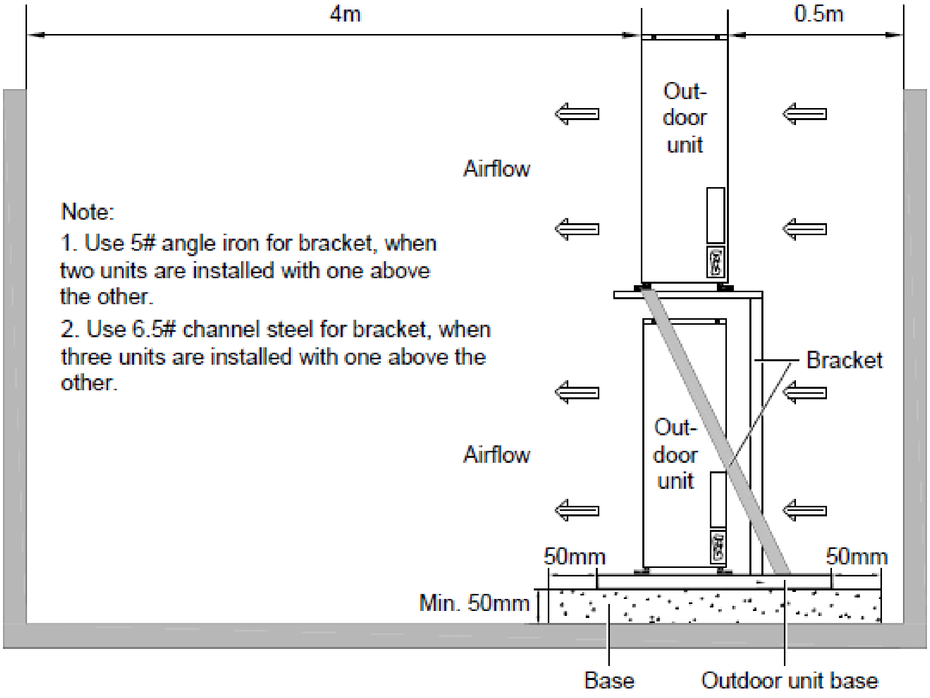

4m
0.5m
Out-
door
unit
Airflow
Note:
1. Use 5# angle iron for bracket, when two units are installed with one above the other.
2. Use 6.5# channel steel for bracket, when three units are installed with one above the other.
Bracket
Out-
door
unit
Airflow
50mm
50mm
Min. 50mm
Base
Outdoor unit base

Figure 2-19 Installing multiple outdoor units one above the other

Following points need to be taken during the installation of the outdoor unit:

- The outdoor unit must be placed appropriately in a safe place for maintenance. It also should not be installed on the bottom floor of the public site. It should not be kept in a residential area.
- It should not be kept in an environment where noise levels are considered crucial.
- Keep the outdoor unit in a clean environment, free of debris, dust, and foreign matter. This is done to avoid blocking of the heat exchanger and ensure an efficient cooling effect.
- There should be no steam, hot gas, and exhaust gas in the vicinity of the outdoor unit.
- Preferably, keep a distance of above 450mm between the outdoor unit and the wall, obstacles, or adjacent devices.
- Avoid keeping the outdoor unit in places where snow may accumulate in the air intake side and air outlet side.
- Preparing a base to bear the weight of the outdoor unit is important where the base should be at least 50mm higher than the ground and 50mm wider than the outdoor unit base.
- The outdoor is around 43 kg; therefore, utmost care must be taken while removing it from the cabinet and placing it at the top of the cabinet; any mishandling will result in severe injury and damage to the equipment.
- The AC is an industry-grade device, used in the SmartCabinet 2-P system and is not sold separately meaning it is inclusive with the SmartCabinet 2-P package. Its total rated power is larger than 1 kW, in compliance with the IEC61000-3-2 standard.

- Connecting the Copper pipes

In this section, the general principles of connecting copper pipes, installation information about the connectors and the required pipe connections will be explained in detail.

General Principles

- Copper pipes with quick thread connectors must be used to connect the indoor and outdoor unit. If the pipe length exceeds the standard pipe length and a straight copper pipe is used, in that case, piping joints must be brazed.
- Refer to the following *Table 2-* shows the vertical distance between the indoor and the outdoor unit.

Table 2-6 Vertical distance between indoor and outdoor unit

Relative position	Value
Outdoor unit installed higher than the indoor unit	Maximum: 15m
Outdoor unit installed lower than the indoor unit	Maximum: 5m

- Follow standard industry practices in selection and placement of pipes, system evacuation, and charging with refrigerant (only when the pipeline is long). The standard refrigerant of the AC unit is R410A and the charging amount is 1.2 Kg.
- Take the pipeline pressure drop and the oil return to the compressor into consideration to avoid oil leakage and clogging in parts of the system. Utmost care while considering these factors minimizes the noise and vibration significantly.
- Consult Vertiv if an extended piping kit is required or if the equivalent length exceeds 30m. Also, consult Vertiv if the vertical distance between the indoor unit and outdoor unit exceeds the values mentioned in the Table 2-6 if the equivalent length exceeds 20m, it needs to add a check valve in liquid pipe.
- The equivalent length of each part is shown in the Table 2-7 Factors such as resistance loss due to elbows and valves need to be considered. The technician or engineer installing the unit must confirm if the values are appropriate in accordance with the site conditions.

Table 2-7 Equivalent Piping length

Liquid Pipe OD (inch)	Equivalent length (m)		
	90° elbow	45° elbow	T-type three way
1/4	0.21	0.10	0.76
1/2	0.24	0.12	0.76

- Installation Notes of the connector
  - Both top as well as the bottom piping method are compatible with the SmartCabinet 2-P (for bottom piping, loosen the connectors that connect the pre-installed pipes in the cabinet and the indoor unit).

- The connectors of the unit are located on the AC indoor unit and outdoor unit as well as on top of the cabinet. Utmost care must be taken while connecting the quick thread connector.

Read the following steps thoroughly before making the connection:

- *Remove the dust-proof caps.*
- *Wipe the coupling seats and threaded surface with a clean cloth carefully.*
- *Lubricate the male thread with refrigerant oil.*
- *Thread the coupling halves together manually (by hand) to ensure that the threads mate properly.*
- *Tighten the coupling body's hexagon nut and union valve until a definite resistance is felt.*
- *Use a marker to draw a line lengthwise from the coupling unit to the bulkhead. Tighten the nuts by an additional quarter turn with 2 wrenches. The misalignment of the lines depicts how much the coupling has been tightened. The final quarter turn is essential to ensure that the joint doesn't leak. Use 2 wrenches in tandem with each other during the connection as a single wrench can damage the coupling copper lines easily.*
- When installation the outdoor unit on the wall,the installation height must conform to the requirements of the personnel operating height.

The recommended tightening torque values are listed in the Table 2-8.

Table 2-8 Tightening torque values

Coupling size	Torque value (N.m)
1/4"	6 ~7
1/2"	8 ~9

- Refrigerant piping connections

The refrigerant piping connections (discharge side tube and liquid side pipe) between the indoor unit and the outdoor unit is shown in Figure 2-20.

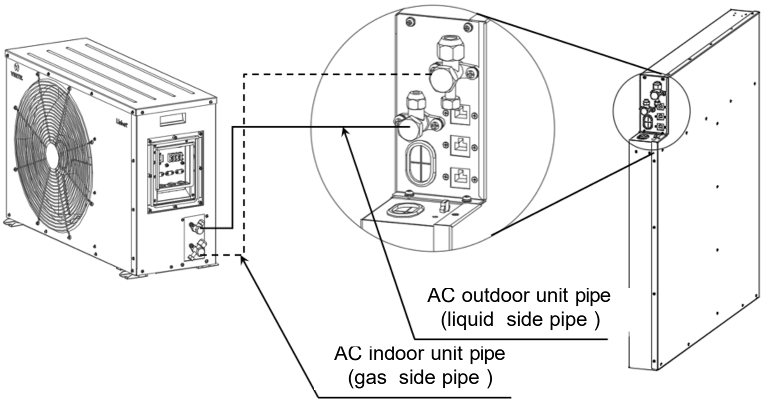


Figure 2-20 Indoor and outdoor unit piping connections

- Required Pipe connections

Following steps must be implemented during connection of the refrigerant pipe between the indoor unit and the outdoor unit (discharge pipe and liquid pipe).

- The copper pipe provided by the factory is 5m in length. If longer pipes are required, contact the nearest Vertiv office or the respective sales dealer.
- The liquid pipe functions as the refrigerant liquid pipe of the outdoor unit outlet. So select an appropriate pipe diameter and length for the pipe to ensure that the pressure drop of the refrigerant liquid through the pipe during the unit operation doesn't exceed 40kPa (5psi ~6psi).
- Install and remove the pipe with utmost care in order to prevent it from getting damaged. Use tube benders and ensure that all the bends are made accurately prior to making connections to either end.
- If the jointing mode is required, ensure all the refrigerant piping connections are made with silver blazed joints.
- Check all the piping supports, leakage testing, dehydration of refrigerant pipes, and evacuation before usage. Use vibration isolation support in order to isolate the refrigeration pipes from the building.
- Use soft and flexible material for packing around the pipes to protect them from damage caused due to openings in walls and to reduce vibration transmission.
- Connect pipes of the indoor and outdoor units based on the labels. The unit adheres to the quick connection mode.
- The AC has been charged with appropriate refrigerant before delivery. However, if the connecting pipe between the outdoor unit and indoor unit is longer than 7.5m, add the refrigerant to the system to ensure normal system operation.

Refrigerant must be added in accordance with the following formula:

Refrigerant amount to be added (kg) = Additional Refrigerant amount per meter of the liquid pipe (kg/m) × total length of the extended liquid pipe (m)

The Table 2-9 shows the refrigerant amount to be added per meter of the liquid pipe.

Total length of the extended liquid pipe (m) = Total length of the liquid pipe (m) – 5m

Table 2-9 Adding refrigerant amount per meter of liquid pipes with different ODs

Added amount of refrigerants per meter (kg/m)	Added amount of lubricants per meter (ml/m)
0.050	10.5

- *The AC refrigerant used is R410A. Low quality or counterfeit refrigerant will cause severe damage to the system. Therefore, use the refrigerant recommended by Vertiv*

  Co. Any damage or fault due to use of a low quality refrigerant or any other brand (other than the one recommended by Vertiv) will result in the warranty getting void.
  - *On completion of the installation, prior to start up or commissioning, ensure that all the connected pipes are installed accurately and do not have any leakage. Apply a sealant to the unit pipe outlets to prevent leakage.*
  - The lubricants type is FV50S.

- Connecting the copper piping
  - When installing the air conditioner external copper tube, first loosen the three M5 hexagon socket screws of the rubber block at the top plate and fix the seven seal rubber seats. Figure 2- shows the layout of the top of the cabinet.

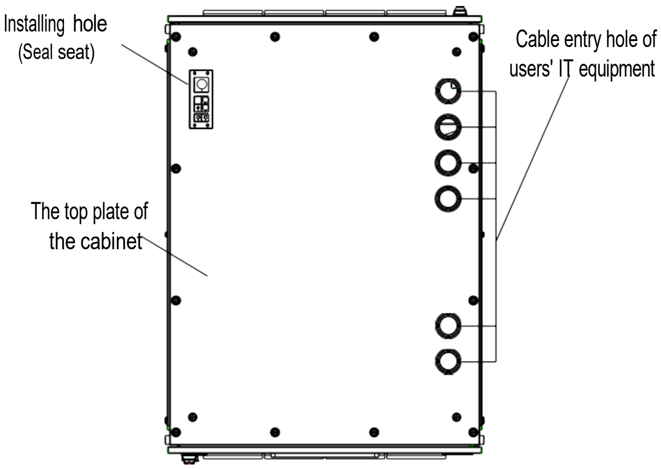

Installing hole
(Seal seat)
Cable entry hole of
users' IT equipment
The top plate of
the cabinet

Figure 2-21 Rubber Block Lock fixing seat

  - The external copper pipe of the air conditioner has a liquid side copper pipe (thin) and a gas side pipe (coarse). Pass the copper tube through the hole in the top of the cabinet and insert it into the sealing seat, as shown in Figure 2-22. At this point, pass other cables through the seal seat at the same time.
  - Finally, the two copper pipes with the sealing seat and other cables will be inserted into the fixing seat together, and the three screws are fixed, and the installation is completed. As shown in Figure 2-23.

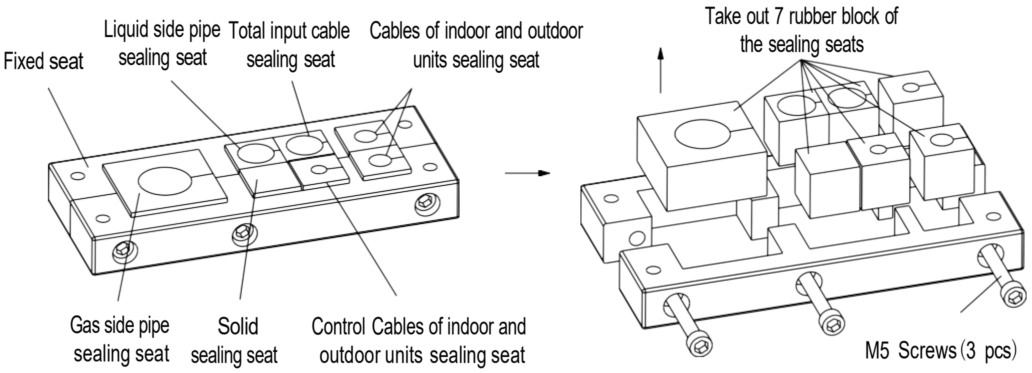

Fixed seat
Liquid side pipe sealing seat
Total input cable sealing seat
Cables of indoor and outdoor units sealing seat
Take out 7 rubber block of the sealing seats
Gas side pipe sealing seat
Solid sealing seat
Control Cables of indoor and outdoor units sealing seat
M5 Screws (3 pcs)

Figure 2-22 Split rubber block holder locking

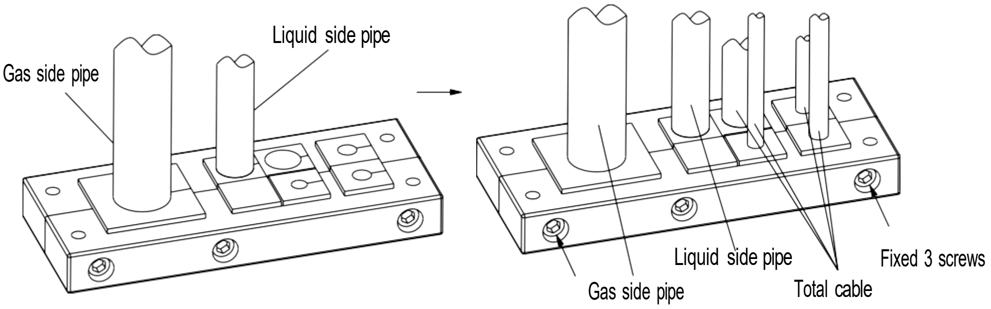

Gas side pipe
Liquid side pipe
Liquid side pipe
Gas side pipe
Total cable
Fixed 3 screws

Figure 2-23 Fixing Pipes and Cables

The piping interface position of the indoor unit is shown in Figure 2-24.

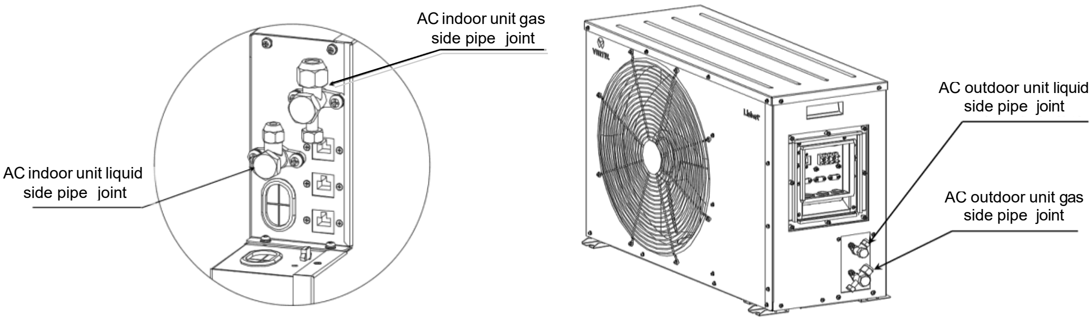

AC indoor unit gas side pipe joint
AC indoor unit liquid side pipe joint
AC outdoor unit liquid side pipe joint
AC outdoor unit gas side pipe joint

Figure 2-24 Schematic diagram of the pipeline interface (left: indoor unit right: outdoor unit)

After the copper pipe is fastened, the liquid pipe and the trachea joint of the internal air conditioner and the exposed copper pipe are tightly wound to the two layers with the insulating cotton in the attachment to ensure that there is no exposed copper pipe.

2.3.3 Connecting the Drain Pipe of the indoor unit

The indoor unit drains the condensate water to the tray in the cabinet directly. The condensate water flows to the drainage channel or outdoors along the drain pipe located at the bottom of the cabinet as shown in Figure 2-25. The standard length of the drain pipe is 5m.

- *The drain pipe cannot be placed at frozen places or in freezing temperature.*
- *It must be laid close to the ground.*
- *The pipe cannot be higher than the tray outlet.*

Figure 2-25 shows an example of condensate water pipe location:

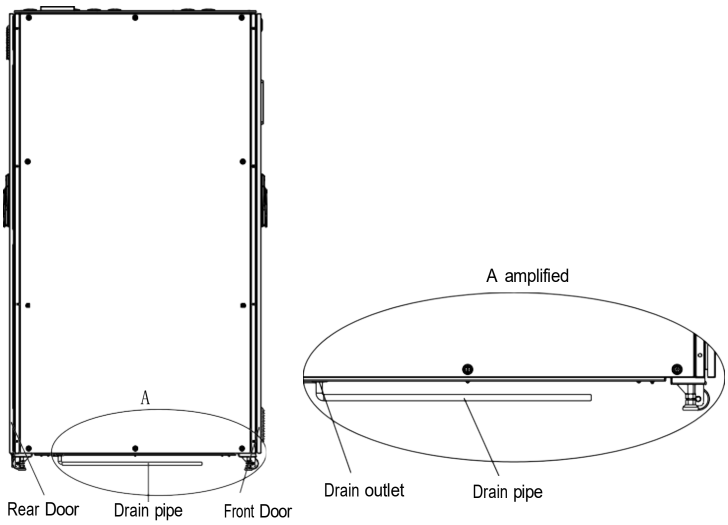

A amplified
A
Rear Door
Drain pipe
Front Door
Drain outlet
Drain pipe

Figure 2-25 Condensate water pipe location

2.3.4 Installing the battery module (optional)

The SmartCabinet 2-P system is equipped with an ITA series - 6kVA UPS. The incoming power supply from the mains and power distribution management functions are realized by the power distribution management unit (PMB, which is pre-installed inside the cabinet) installed in the same cabinet. The UPS configured in the system is installed at the side of the cabinet at the factory and does not occupy the U space. The battery module is an optional accessory. The following describes how to install the battery.

- Use the M4 cross recessed countersunk head screws (8 pieces) to fix the two mounting ears (accessory) to the two sides of the front panel of the battery module. The mounting ears 1 (one hole is fixed) and the mounting ears 2 (two holes fixed) are fixed. The location of the battery pack is shown in Figure 2-26.

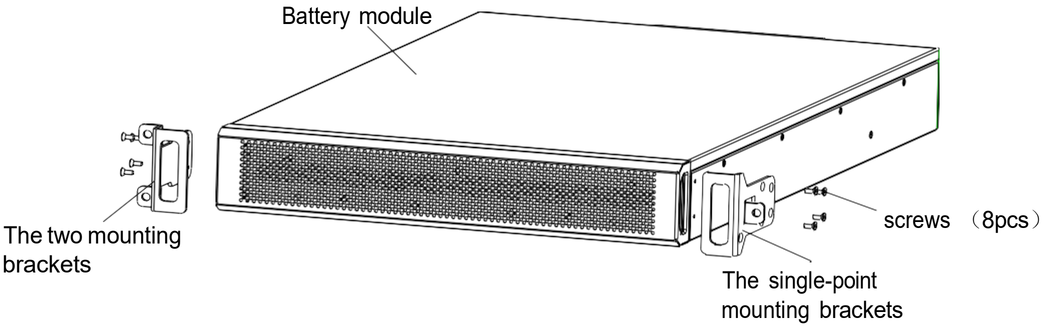

Battery module
The two mounting brackets
screws （8pcs）
The single-point mounting brackets

Figure 2-26 Mounting brackets for battery module

- The battery module is placed on the carrier plate of the cabinet, is mounted at a lower position UPS. Pushing the battery pack and M5 × 12 with screws (3) through the brackets to the rack, shown in Figure 2-27.

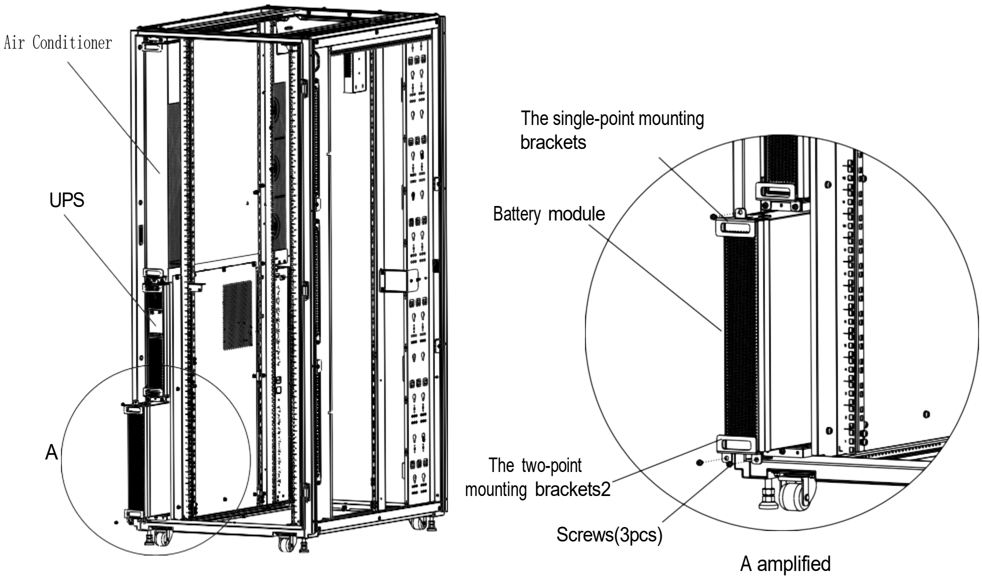

Air Conditioner
UPS
A
The single-point mounting brackets
Battery module
The two-point mounting brackets2
Screws(3pcs)
A amplified

Figure 2-27 Mounting the battery module

- *The battery unit is an optional item and needs to be installed on the SmartCabinet 2-P unit at the customer site.*

2.3.5 Installing the Sensors

The configuration of SmartCabinet 2-P monitoring system is shown in Table 2-0. The user needs to install a cable type water leak detection sensor at site.

Table 2-10 SmartCabinet 2-P Monitoring System Configuration

No.	Product name	Quantity	Foreign Product Model
1	Smart Temperature Sensor	2	IRM-S01T
2	Belt water sensor	1	IRM-S01W (5m)
3	Wireless Modem (USB interfaces, optional)	1	/
4	RJ45 smart digital sensor interface input	2	IRM-S04DIF

- *For detailed installation instructions on the sensors mentioned in the Table 2-10, refer*
  "IRM-S01T smart temperature sensors User Manual";
  "IRM-S04DIF RJ45 interfaces smart digital sensor inputs User Guide";
  "IRM-S01W-belt type water sensor User Manual" .
- *Temperature sensors, 4DIF sensor preinstalled at the factory.*

- Installation of cable type water leak detection sensor

1) Open the rear door of the SmartCabinet 2-P unit and attach the cable type water leak detection sensor to the lower part of the cable management board. The specific position is determined according to the site, as shown in Figure 2-28.

2) Connect the water leak detection sensor and attach it to the cable tie holder to make the fix the water leak cable aesthetically.

3) Place the test strip in the bottom area of the cabinet, as shown in Figure 2-29.

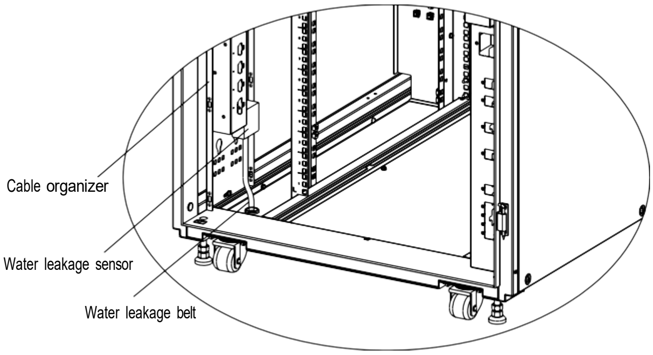


Figure 2-28 Water Sensor mounting position

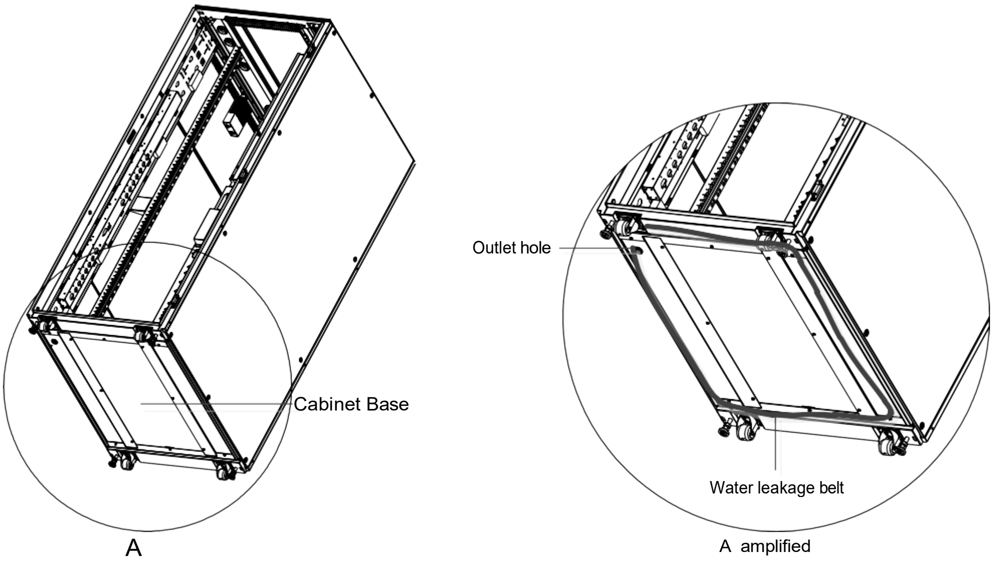


Figure 2-29 Installing the cable water leak sensor

2.3.6 Installing Sealing Components

- *Because the customer equipment line wiring path is different, so the system only standard a certain number of sealing components, can only meet the entire system of external protection level, can not guarantee the level of protection of the customer outlet end.*

After installing the complete machine, the customer equipment must be installed to install the sealing components, so as to meet the protection requirements.

1) Remove the conical seal seat and cut off the conical seat with a value less than 43~47 on the seal seat with an art knife to penetrate the bellows from the bottom of the conical seal seat to form 1 sealed assemblies, as shown in Figure 3-30. Note: The edges of the installed conical seal seat are stuck in the annular groove of the bellows to ensure sealing.

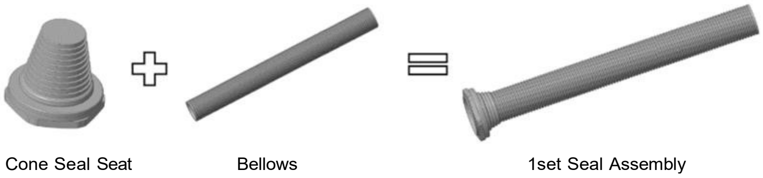


Figure 2-30 Single Piece of each sealing component

2) On site according to the customer line position, select the inlet hole, remove the stuffy cover at the top of the cabinet, and then install the sealing assembly at the top of the cabinet after installation as shown in Figure 2-31.

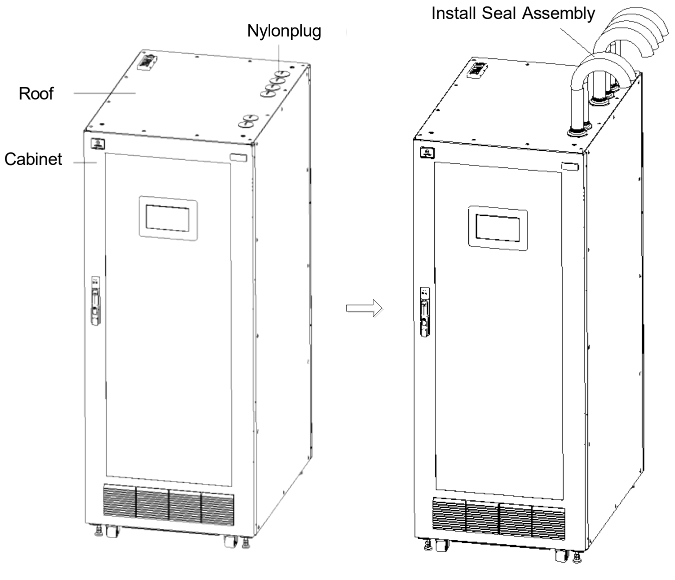


Figure 2-31 Sealing Assembly Installation

2.3.7 Cabling connections of SmartCabinet 2-P unit

- *All the external input cables are user-prepared meaning the customer is solely responsible for obtaining and preparing the external input cables.*
- *The power cables which are used must be in compliance to the local electrical standards for cables.*
- *Bind the power cables and communication cables separately on the cable organizers on both sides in the rear space of the cabinet. Vertiv recommends that the power cables should be managed on the right cable organizer while the communication cables should be managed on the left cable organizer.*

Prior to connection, remember that the total input cables (length, size and quantity) needs to be user-prepared, based on the installation position of the SmartCabinet 2-P. Comply with the local regulations and protocols. Also, consider the environment and refer to the global table as per the IEC60950-industry standard Table 3B. Vertiv recommends that the minimal CSA of selected cables must be 6mm2 and the external total input air breaker is large than or equal to 50A.

- *The UPS is a large current leakage device; therefore, it s recommended that a residual current operated circuit breaker should not be configured.*

Following is the procedure or set of steps for connecting the total input cables:

The procedure for connecting the total input cable is mentioned as follows:

1. Crimp the OT terminal at the cable end (supplied delivery).

2. Open the PMB rear cover and connect the crimped cable to the total input position of the PMB terminal block, as shown in Figure 2-32.

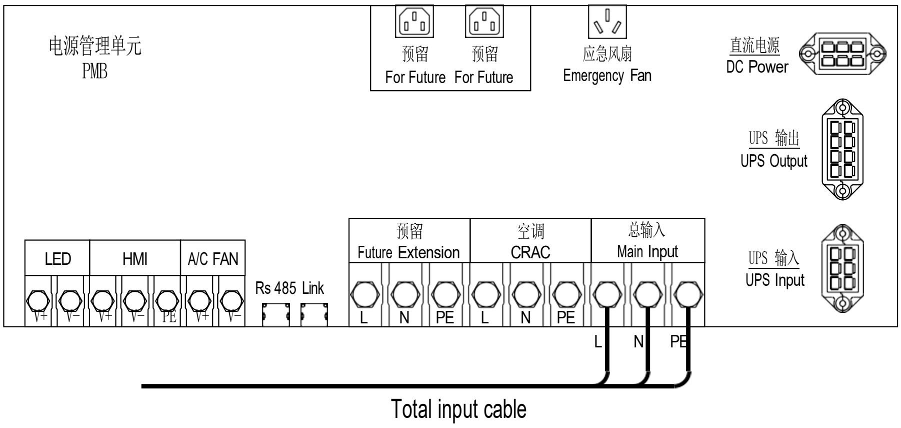

电源管理单元
PMB
预留
For Future
预留
For Future
应急风扇
Emergency Fan
直流电源
DC Power
UPS 输出
UPS Output
UPS 输入
UPS Input
LED
HMI
A/C FAN
V+
V−
V+
V−
PE
V+
V−
Rs 485
Link
预留
Future Extension
空调
CRAC
总输入
Main Input
L
N
PE
L
N
PE
L
N
PE
Total input cable

Figure 2-32 Connecting the Total input cables

3. Insert the cable into the main input cable outlet hole and replace the cover.

4. The total input cable needs to be tied and fixed on the side plate slot of the rack to prevent loose wiring.

5. The total input wire then passes through the wire mounting holes on the top plate, as shown in Figure 2-33. The cable routing holes are described in the *Connecting the Copper pipes* section.

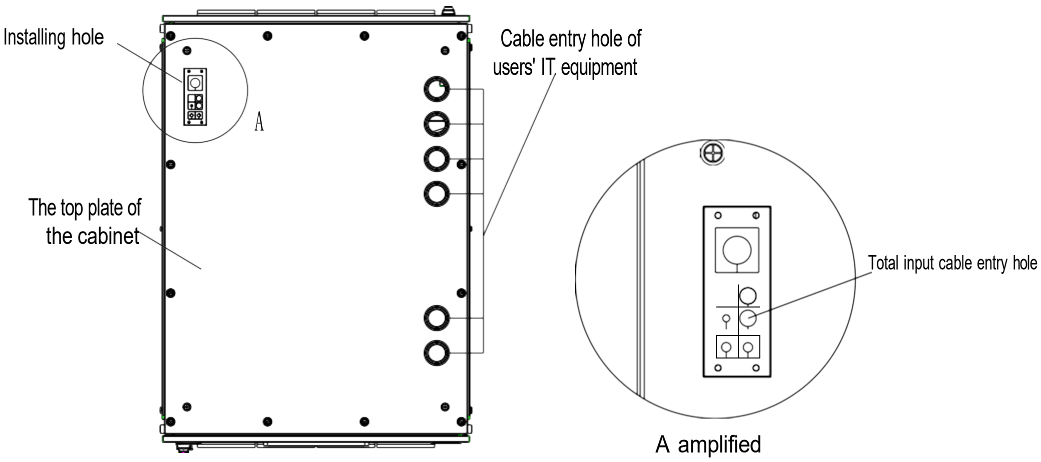

Installing hole
A
Cable entry hole of users' IT equipment
The top plate of the cabinet
Total input cable entry hole
A amplified

Figure 2-33 An external input through the cable line hole

- *After the cable is laid, seal the cable outlet hole of the cabinet with the glue to keep the cabinet sealed.*

- Connecting the cables of the Indoor and Outdoor units

The air conditioner indoor unit comes with two three-core cables (fan cable and compressor cable). Open the outdoor unit wiring cover and connect the two outdoor unit cables and one 485 control cable through the top cover cable hole, as shown in Figure 2-34. See the section on *Connecting the Copper pipes* for the routing holes to pass these cables.

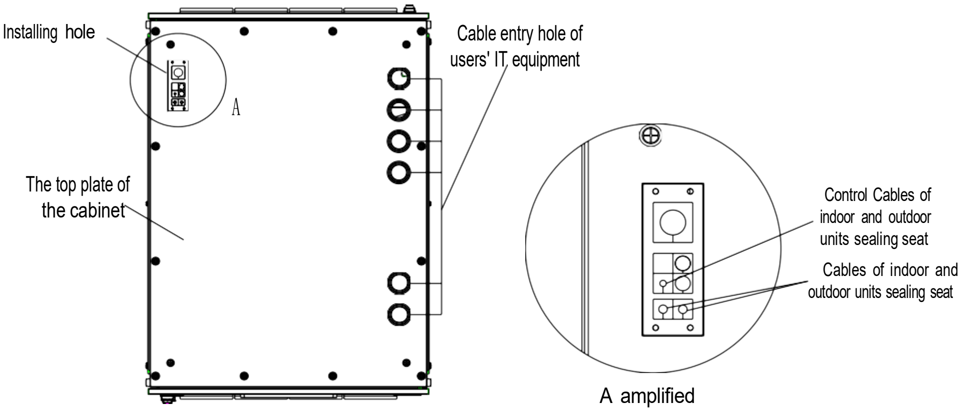

Installing hole
A
Cable entry hole of users' IT equipment
The top plate of the cabinet
Control Cables of indoor and outdoor units sealing seat
Cables of indoor and outdoor units sealing seat
A amplified

Figure 2-34 The outdoor unit connection cables through cable hole

For connecting the cables to the outdoor unit, refer the procedure mentioned below.

1. Connect the three cables of the top cover, cover the cable through the hole, and connect the cable to the corresponding terminal of the outdoor unit according to the line end of the cable, as shown in Figure 2-35.

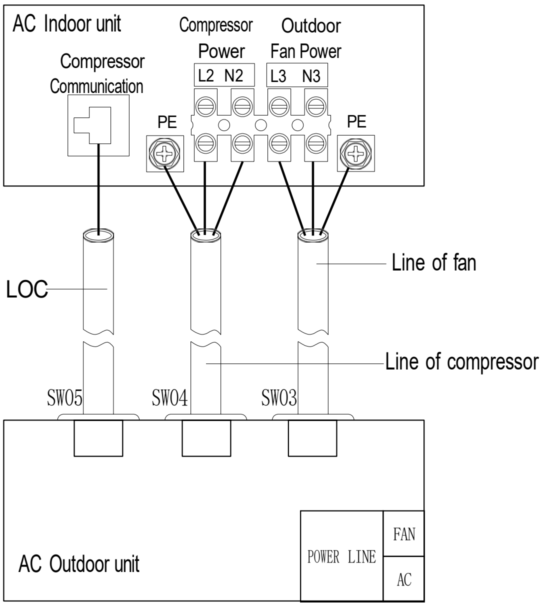

AC Indoor unit
Compressor Communication
Compressor Power
Outdoor Fan Power
L2
N2
L3
N3
PE
PE
LOC
Line of fan
Line of compressor
SW05
SW04
SW03
AC Outdoor unit
POWER LINE
FAN
AC

Figure 2-35 The outdoor unit power supply wiring diagram

2. Replace the cover.

- *After the cable is laid, seal the cable outlet hole of the cabinet with the glue to keep the cabinet sealed.*

- Connecting the earthing cable

Earthing portion of the bottom of the rear cabinet door tag areas are earthing holes, shown in Figure 2-36.

For earthing connection, use M6 screws to fix the one end of the cable earthing hole, with the the other end of the cable drawn from the bottom plate and connected to the ring at the earthing copper strip.

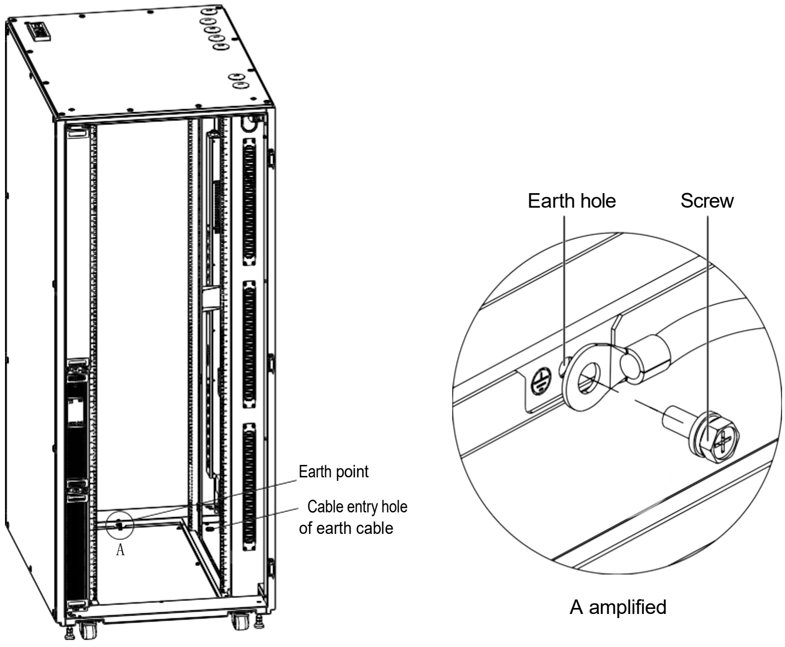


Figure 2-36 Grounding cable connector

- *The product is only suitable for TN systems, in order to ensure safe, cabinet components, and air conditioning components must be grounded.*
- *Yellow-green ground cable used is not less than 6mm2 reliable connection to Grounding copper, M6 when the fixing screw hole cabinet grounding recommended wrench.*
- *If an earth block doesn't exist in the building where the SmartCabinet 2-P is placed, use a yellow-green cable of no less than 6 mm² to connect the earth terminal of the cabinet with that of the PMB total input; this ensures reliable earthing of the cabinet.*

- A cable connecting the battery (optional)

Connect the red, black, and yellow terminals on one end of the battery cable to the battery port terminals on the rear panel of the UPS, and connect the other end to any battery port on the battery module, as shown in Figure 2-37.

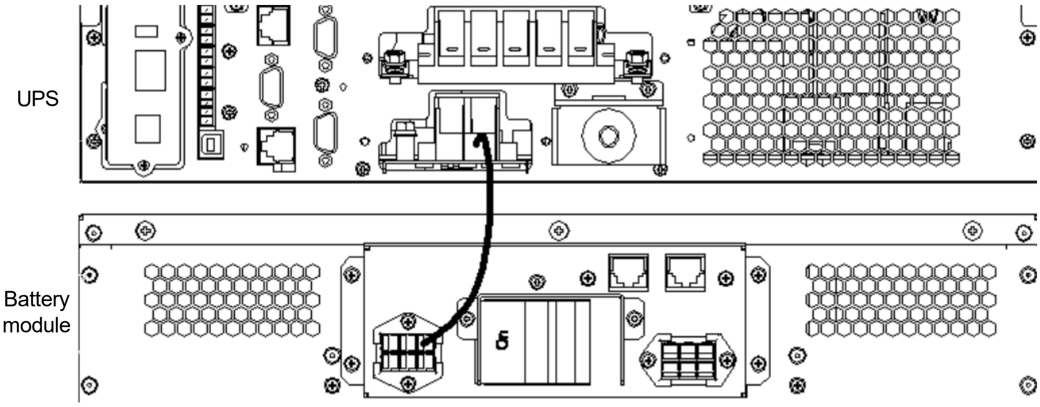


Figure 2-37 Connecting the UPS to the Battery Module

- *When connect battery cable, Lateral panel should be removed and screw should be removed and installed by slotted screwdriver*

- LCD monitor cable and connect the user local display

The connecting network cables shall not be provided along with the unit and needs to be provisioned by the end customer.

When the product leaves the factory, ETH-1 port of LCD local display has be led to top right corner of rack front door, as shown in Figure 2-38, The user inserts one end of the control line into future ETH-1 port to complete the connection between the user control line and the LCD local display.

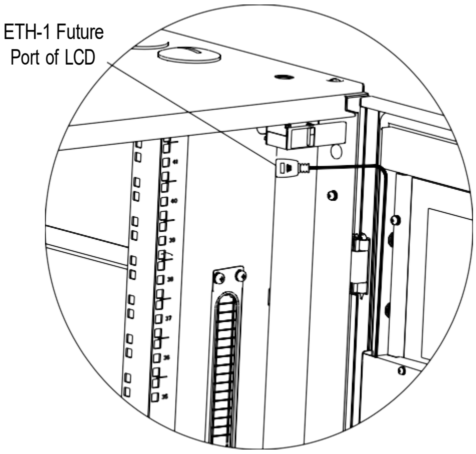


Figure 2-38 After removal of the cover LCD local display

2.3.8 Connecting Fire system wiring (optional)

The whole machine system can provide customer fire interface, customer fire control cable access system configuration of the 4DIF-2 DI1 port, to achieve fire system access, wiring as shown in Figure 2-39.

Walking line path: Fire control line by the top of the cabinet through, along the wire plate line, in the 4DIF-2 of the DI1 port into the terminal, complete the line.

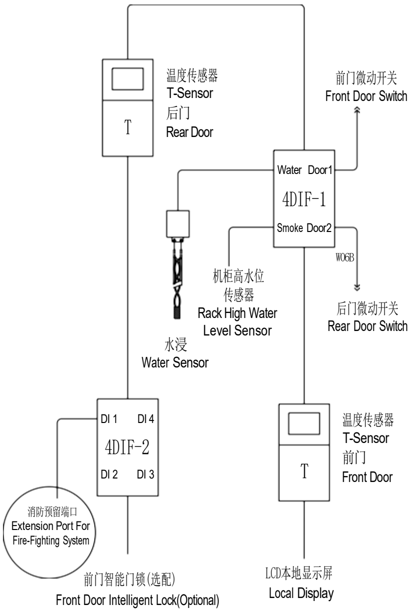

温度传感器
T-Sensor
后门
Rear Door
T
前门微动开关
Front Door Switch
Water Door1
4DIF-1
Smoke Door2
W06B
机柜高水位
传感器
Rack High Water
Level Sensor
后门微动开关
Rear Door Switch
水浸
Water Sensor
DI 1 DI 4
4DIF-2
DI 2 DI 3
温度传感器
T-Sensor
前门
Front Door
T
消防预留端口
Extension Port For
Fire-Fighting System
前门智能门锁(选配)
Front Door Intelligent Lock(Optional)
LCD本地显示屏
Local Display

Figure 2-39 Fire System Wiring

2.4 Commissioning guide

2.4.1 Commissioning Instructions

In this chapter, the operation instructions of SmartCabinet 2-P (including checks) before startup, and Power On/Power Off procedures are explained in detail. System commissioning is a must before starting work on the machine. Therefore, the commissioning procedures are explained in depth to enable technicians to perform the startup process prior to any operation on the machine.

The various stages in the commissioning procedure are as per the following flowchart (Figure 2-40):

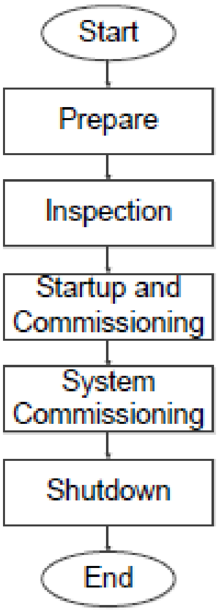

Start
Prepare
Inspection
Startup and Commissioning
System Commissioning
Shutdown
End

Figure 2-40 Commissioning Flowchart

- Preparations

Product Commissioning is of prime importance before deployment of the product. Prior to Commissioning, the hardware installation and inspection work must be completed. Also, the cabling and inspection must be completed in an accurate manner.

- Inspection

The following Table 2-11 describes the Pre-commissioning checks to be carried out:

Table 2-11 Pre-commissioning checklist

Inspection Items	Inspection Criteria	Remark
Distribution	Check, measure, and confirm if the AC mains voltage and frequency are normal, and verify if the AC mains correction is correct without any short circuit	/
	Check and confirm if the distribution cables of UPS and PMB are correct without any short circuit	/
	Check if the installation and wiring of the configured battery is correct and if the battery polarities, both negative and positive are correct.	/
Monitoring unit	Check if all the communication cables are connected in correct sequence based on the wiring diagram and cable number	/
Thermal Management system	Check if the air conditioner is charged with refrigerants	/
	Check if the air conditioner pipes are connected correctly without leakage	/
	Check if the emergency fan supply port is proper	
Smart Lock	Check if the distribution and signal cables of the smart lock are correctly connected based on the wiring diagram and cable number	For specific models only
	Check and confirm if the access control card can open the smart lock in the usual way	
Check the fire fighting	Check and confirm the fire protection system node is normal access	Optional
System	Check if the vacant space has been sealed by dummy plates	/
	Check the isolated sheet metal parts in the sealed frame of the air conditioner to ensure that the refrigerant pipe and the power supply communication cables are led out from the top of the isolated sheet metal part	/

- *Before starting the Smart Cabinet 2-P, ensure that the maintenance bypass MCB of the MSC-PMB is opened and locked by the sheet metal lock*
- *Before startup, confirm that the SPD module color is green*

- StartUp/Commissioning

Prior to Startup of the SmartCabinet 2-P system, dial the “400” service phone number to authorize the startup of the UPS. The following flowchart (Refer Figure 2-41) depicts the startup flowchart which lists all the steps to be taken while commissioning.

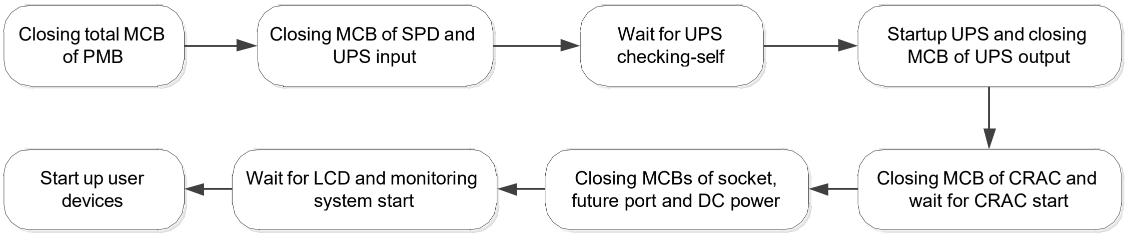

Closing total MCB of PMB
Closing MCB of SPD and UPS input
Wait for UPS checking-self
Startup UPS and closing MCB of UPS output
Closing MCB of CRAC and wait for CRAC start
Closing MCBs of socket, future port and DC power
Wait for LCD and monitoring system start
Start up user devices

Figure 2-41 Startup flowchart

- *For the cautionary measures in the UPS startup, refer to Liebert ITA 6kVA UPS user manual.*
- *The PMB contains an SPD module; therefore, ensure that the PMB SPD MCB is closed when the SmartCabinet 2-P is powered on for operation.*
- *Before starting, ensure that the maintenance bypass switch is opened and is locked by a sheet metal lock.*
- *If an intelligent lock is selected, before opening it, confirm If the configured access control card can open the intelligent lock.*
- *The startup of the SmartCabinet 2-P system should be completed by authorized professionals. Vertiv recommends the use of Vertiv personnel to carry out the Commissioning process.*
- *Remember that the startup or commissioning has to be done correctly and therefore Vertiv recommends its own subject matter experts and professionals for that task. In case of any discrepancy caused due to incorrect startup from the user end (meaning the Commissioning is done by the customer at his site), the warranty will be void. Therefore, follow all the steps mentioned closely and implement it in an accurate manner to rule out possible human errors while commissioning/startup.*

In the main menu screen, press the arrow keys▲or▼Select "Settings" menu, and pressEnterKey to enter the corresponding page. See Figure 2-42.

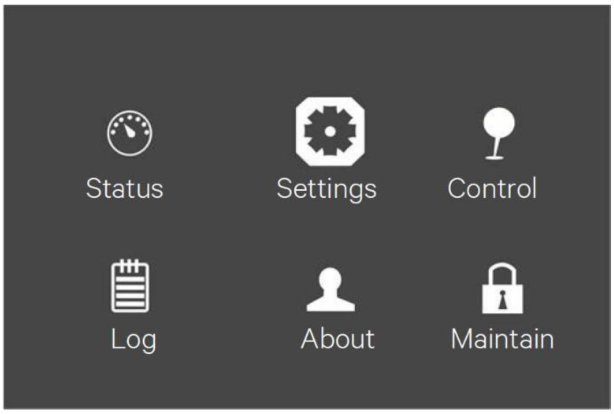
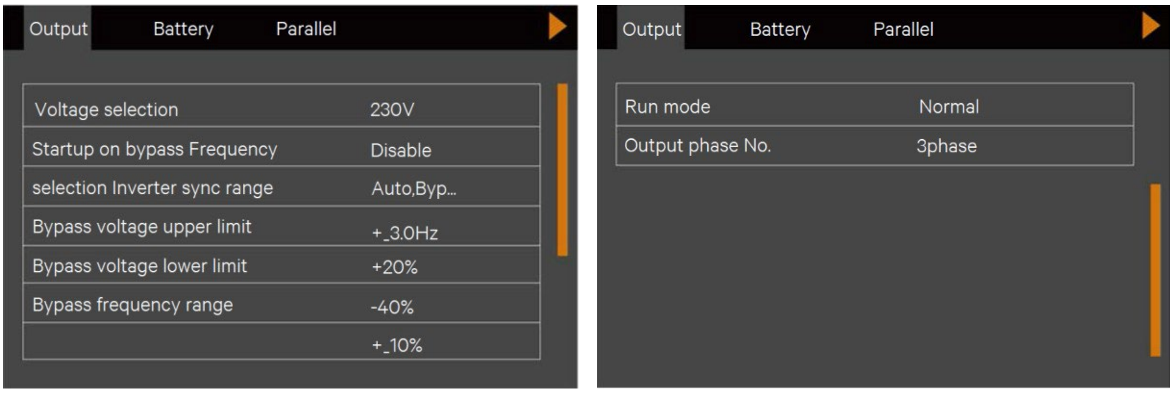

Status
Settings
Control
Log
About
Maintain

Figure 2-42 Main menu screen

Press the arrow keys ▲ or ▼ To select and set the relevant parameters (the "output" as an example). Figure 2-43.

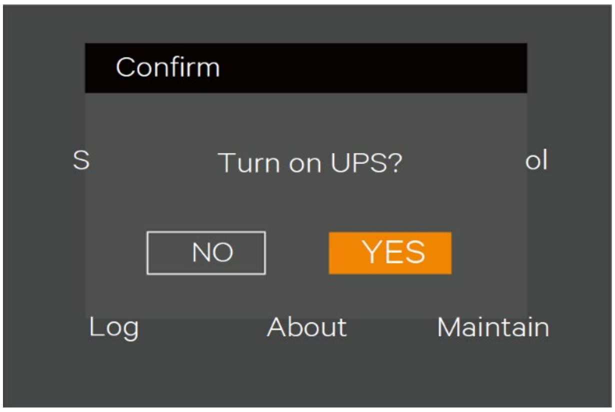

Output
Battery
Parallel
Output
Battery
Parallel

Voltage selection	230V
Startup on bypass Frequency	Disable
selection Inverter sync range	Auto,Byp...
Bypass voltage upper limit	+_3.0Hz
Bypass voltage lower limit	+20%
Bypass frequency range	-40%
	+_10%

Run mode	Normal
Output phase No.	3phase

Figure 2-43 Output Interface

Press the ON button on the UPS panel for 2 seconds. The LCD pops up a dialog box, as shown in Figure 2-44. When the user clicks "Yes", the running indicator (green light) flashes, the inverter is turned on, and the running indicator lights up.


Confirm

Turn on UPS?

S
ol
NO
YES
Log
About
Maintain

Figure 2-44 UPS Dialog open

- Measure if the inverter output voltage is normal. If the battery is not connected, the fault indicator flashes; if the battery is connected, the fault indicator is off.
- Close the UPS output to open.
- Close the air conditioner and wait for the air conditioner to start.
- Close the PMB to open and confirm that the PMB display panel data is normal. or the port indicators are illuminated in sequence.
- Wait for the LCD communication to be normal. Log in to the SmartCabinet 2-P system and confirm that the parameters are displayed normally.

- *The PMB contains a lightning protection module. When the SmartCabinet 2-P system is powered on, ensure that the SPB on the PMB works normally.*
- *Before the SmartCabinet 2-P system is turned on, make sure that the maintenance bypass switch is disconnected and locked by the sheet metal lock.*

- *The SmartCabinet 2-P system must be started by trained and authorized professional technicians. It is recommended to be performed by the staff of Vertiv Customer Service Center.*

2.4.2 System Power on

After booting up, the default display interface is displayed through the LCD, as shown in Figure 2-45.

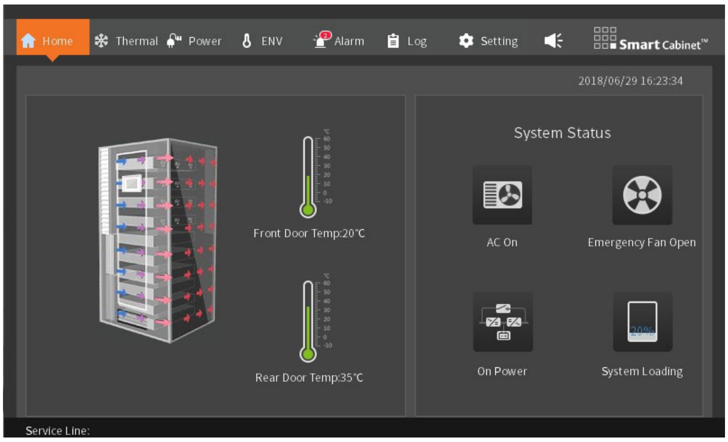
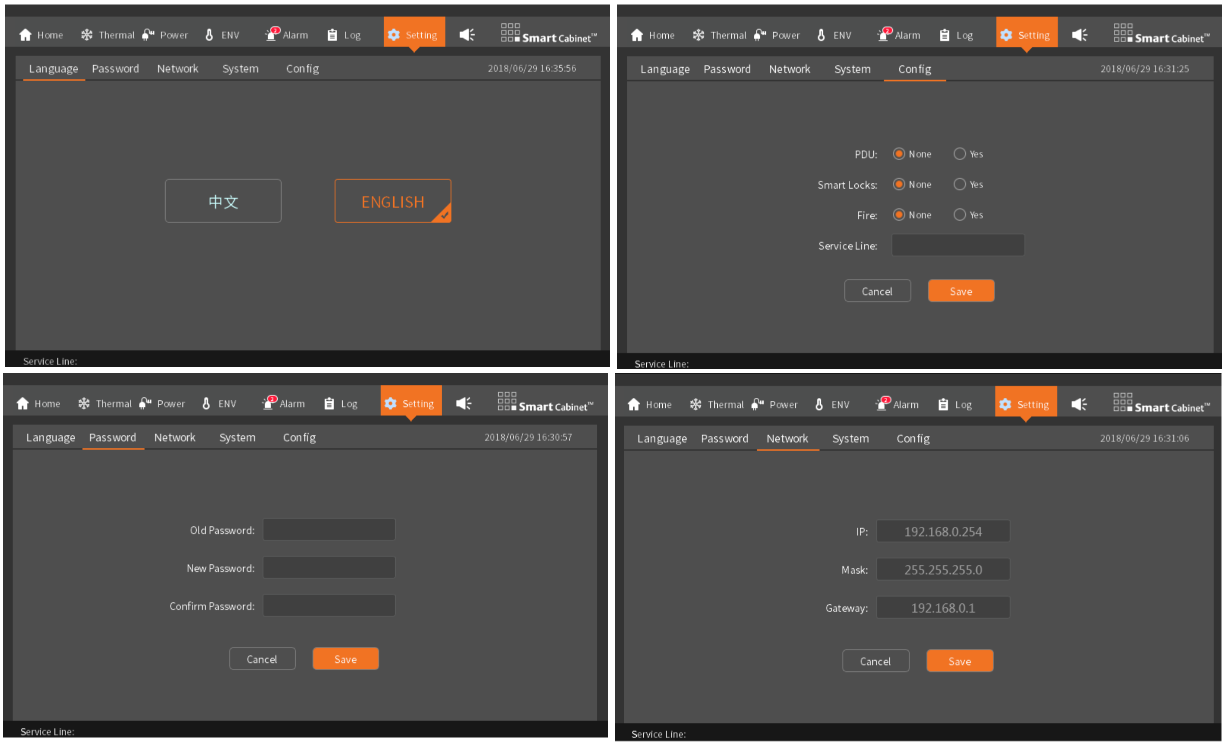

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
2018/06/29 16:23:34
Front Door Temp:20℃
Rear Door Temp:35℃
System Status
AC On
Emergency Fan Open
On Power
System Loading
Service Line:

Figure 2-45 LCD default interface

Through the LCD local display, click "Settings" -> "Configuration", the display configuration selection interface, select the corresponding configuration options according to the device connection, as shown in Figure 2-46.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config
2018/06/29 16:35:56
中文
ENGLISH
Service Line:
2018/06/29 16:31:25
Cancel
Save
2018/06/29 16:30:57
2018/06/29 16:31:06

PDU: ● None ○ Yes

Smart Locks: ● None ○ Yes

Fire: ● None ○ Yes

Service Line:

Old Password:

New Password:

Confirm Password:

IP: 192.168.0.254

Mask: 255.255.255.0

Gateway: 192.168.0.1

Figure 2-46 Set interface

During the countdown process, the SmartCabinet 2-P system will restart the update configuration. After the configuration update is successful, the LCD interface will automatically jump to the system home page.

Check whether each device is in normal operation status through the LCD local display.

After all the devices are running normally, you can open IT devices such as user servers.

2.4.3 Smart locks debugging (optional)

SmartCabinet 2-P can be equipped with a smart door lock. The door lock is an integrated door lock that supports both the key and the ID card, as shown in Figure 2-47. The key can open the door lock under any circumstances, so you need to keep the key in a safe place.

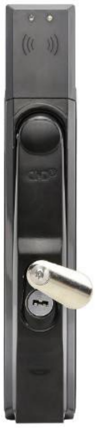
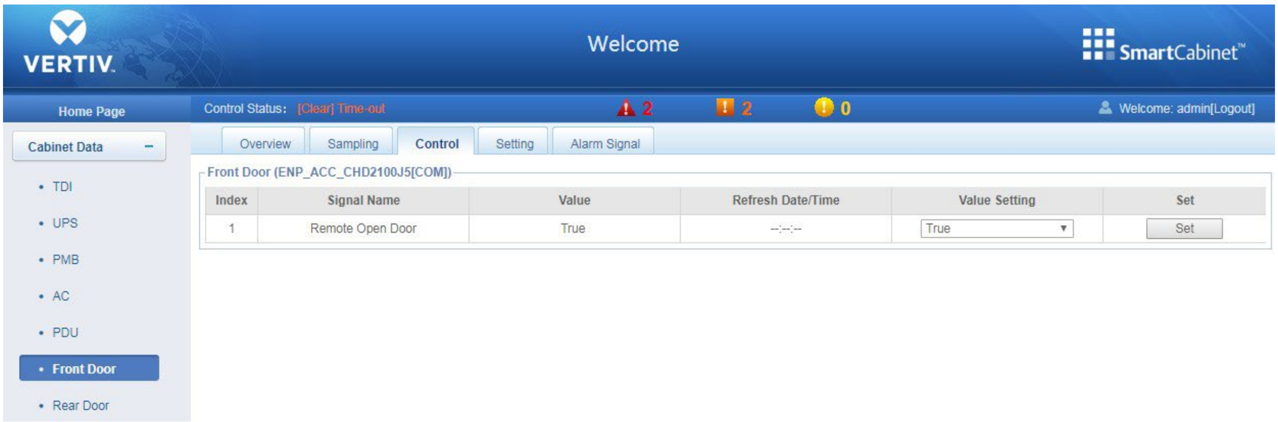


Figure 2-47 SmartCabinet 2-P Intelligent lock appearance

After the smart door lock is powered on, the commissioning personnel can apply the ID card to debug the door lock to confirm that the door lock can be opened normally.

Open the door remotely

When you need to open the door remotely, the commissioner logs in to SmartCabinet 2-P through the web page, click "System Home" -> "Cabinet Information" -> "Front Door" or "Rear Door" -> "Control Signal", click " Remotely open the door" setting signal, as shown in Figure 2-48. After receiving the door lock signal, the field operator can open the corresponding cabinet door.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: [Clear] Time-out
2
2
0
Welcome: admin[Logout]
Cabinet Data
TDI
UPS
PMB
AC
PDU
Front Door
Rear Door
Overview
Sampling
Control
Setting
Alarm Signal

Front Door (ENP_ACC_CHD2100J5[COM])

Index	Signal Name	Value	Refresh Date/Time	Value Setting	Set
1	Remote Open Door	True	--:--:--	True ▼	Set

Figure 2-48 Remote door opening control

- *After the remote authorization to open the door, the door after waiting 5s on-site personnel to operate is not open, the door is automatically locked.*

Access card authorization

When the ID card number is known for card authorization, the commissioning personnel log in to SmartCabinet 2-P through the web page, click “System Homepage” -> “Security Management” -> “Access Control Management” -> “Access Control Card Management”, add The card number is added to the system; then click "Access Control" -> "Permission Management" to authorize the card, as shown in Figure 2-45 and Figure 2-50.

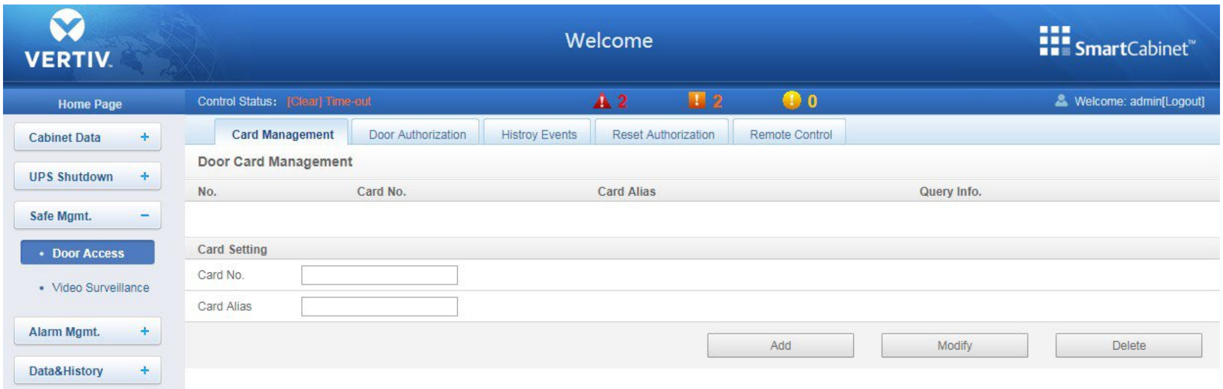

VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: [Clear] Time-out
2
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Door Access
Video Surveillance
Alarm Mgmt. +
Data&History +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Card Management
No.
Card No.
Card Alias
Query Info.
Card Setting
Card No.
Card Alias
Add
Modify
Delete

Figure 2-49 Access card management

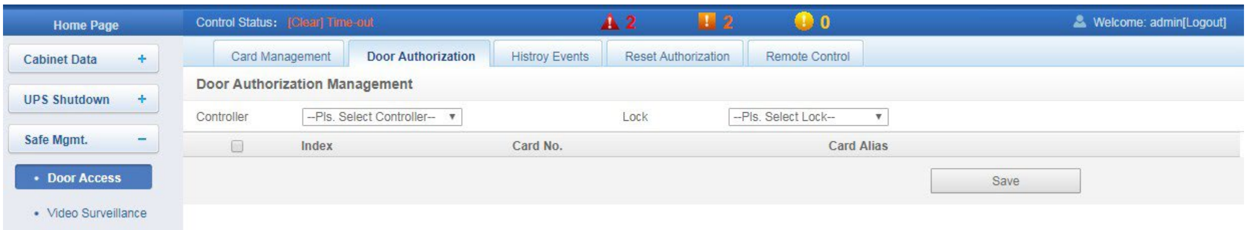
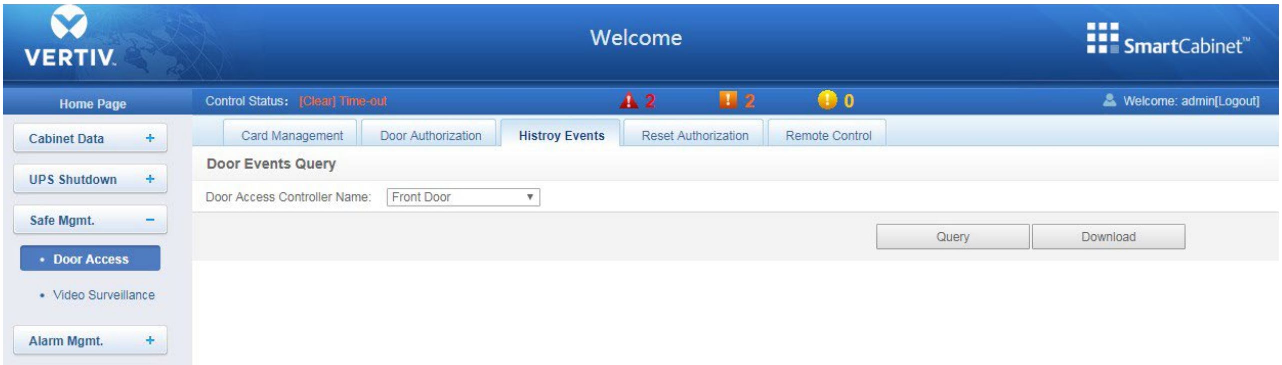

Home Page
Control Status: [Clear] Time-out
2
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Door Access
Video Surveillance
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Authorization Management
Controller
--Pls. Select Controller--
Lock
--Pls. Select Lock--
Index
Card No.
Card Alias
Save

Figure 2-50 Access Card Authorization

When using an unauthorized ID card to swipe the card, the red light of the smart door lock flashes; the commissioning personnel need to log in to SmartCabinet 2-P through the web page, click "System Home" -> "Security Management" -> "Access Control Management" -> "History Query", find the card swipe log, click the card number to authorize the repeat step 4-12 access card authorization step. As shown in Figure 2-51.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: [Clear] Time-out
2
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Door Access
Video Surveillance
Alarm Mgmt. +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Events Query
Query
Download

Door Access Controller Name: Front Door

Figure 2-51 Access to historical information

Clear authorization information

Access management support for all access authorization card in the controller to delete information, click on the "Home System" -> "Security" -> "Access Management" -> "management authority", select the lock controller, click "Empty License Information" . Shown in *Figure 2*-52 .

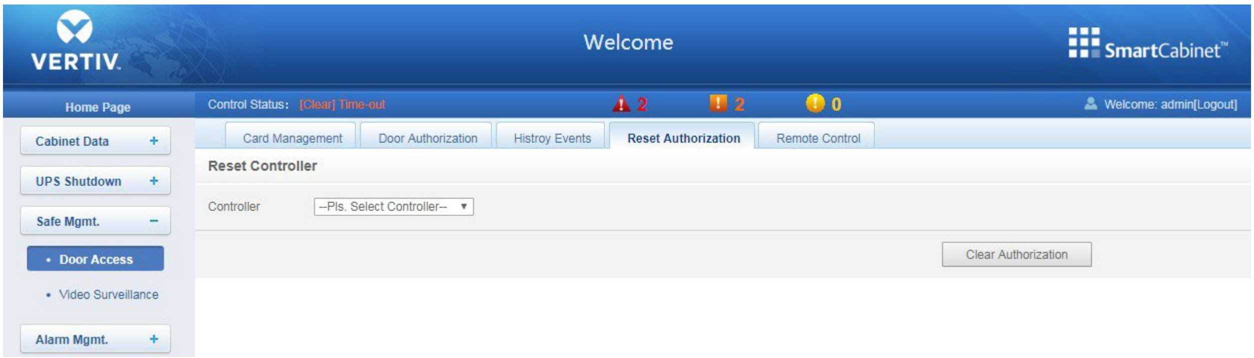

VERTIV.
Welcome
SmartCabinet™
Home Page
Control Status: [Clear] Time-out
2
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
• Door Access
• Video Surveillance
Alarm Mgmt. +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Reset Controller
Controller
--Pls. Select Controller--
Clear Authorization

Figure 2-52 Clear authorization information

2.4.4 Power OFF

Following Figure 2-53 is a set of procedures depicted in a flow chart for the Power Off process:

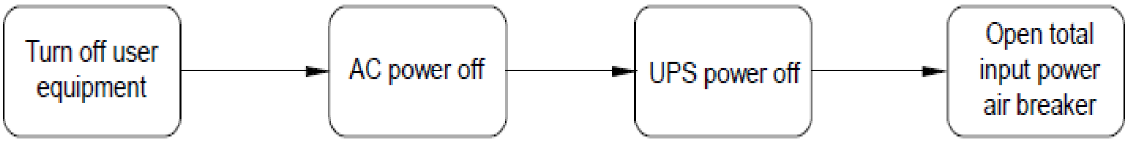

Turn off user equipment
AC power off
UPS power off
Open total input power air breaker

Figure 2-53 Power off Flowchart

Step-by-Step procedures are jotted in the following list for the Power OFF process:

1) All User IT equipment must strictly be powered off.
2) Turn off the AC in the Hot Management Menu using the LCD monitoring system.
3) Once cold air stops flowing from the AC, open the AC air breaker on the PMB.
4) Press the OFF key of the Display Panel.
5) Open the UPS input and output air breakers.
6) Open the total air input breaker on the PMB.
7) Confirm If all the equipment is powered off.
8) Close all the doors of the cabinet.

This sums up the Commissioning process.

3 System Operation

System Operation is divided into 2 sections, namely-

- Display Panel Operation
- Web page of the MSC Intelligent Monitoring unit Display panel operation

3.1 Display panel operation

This chapter describes the LCD local display operation of the SmartCabinet 2-P product, including the SmartCabinet 2-P system home page and system items.

3.2 SmartCabinet 2-P LCD Local Info

SmartCabinet 2-P system home page shown in Figure 3-1.

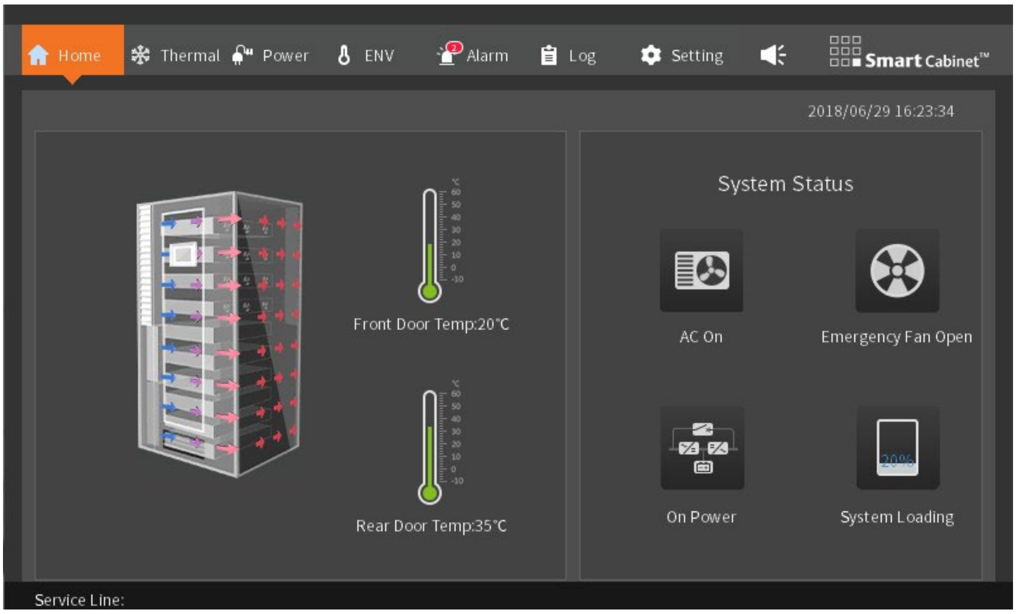

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
2018/06/29 16:23:34
Front Door Temp:20℃
Rear Door Temp:35℃
System Status
AC On
Emergency Fan Open
On Power
System Loading
20%
Service Line:

Figure 3-1 Home page

In SmartCabinet 2-P home, the menu items including the home, thermal management, power supply and distribution, environmental quantities, alarms, settings and logs, the display panel system menu shown in Figure 3-2.

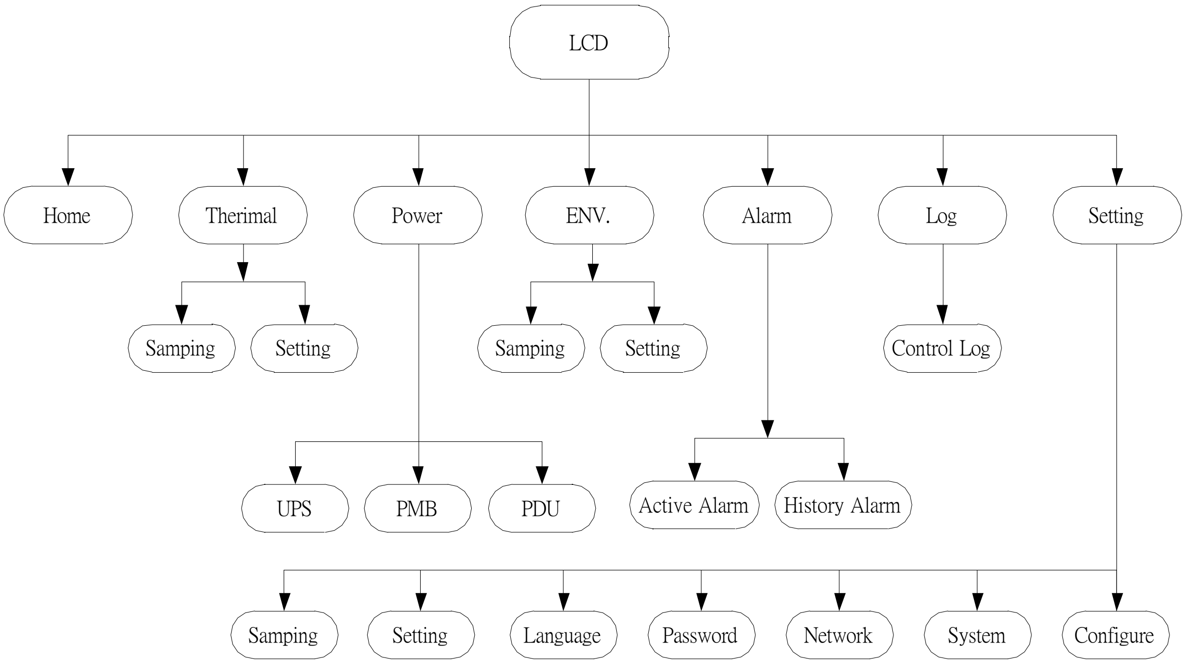

LCD
Home
Therimal
Power
ENV.
Alarm
Log
Setting
Samping
Setting
Samping
Setting
Control Log
UPS
PMB
PDU
Active Alarm
History Alarm
Samping
Setting
Language
Password
Network
System
Configure

Figure 3-2 Power off Flowchart

3.2.1 Local LCD Display Interface

- Startup screen

If SmartCabinet 2-P intelligent monitoring unit has switched on, the screen is skipped automatically, and directed to the home page

- Thermal Management

Air supply temperature employed graph shows the last hour of the data update time curve 6S; Fan, cooling fan with emergency switch animation display state shown in Figure 3-3.

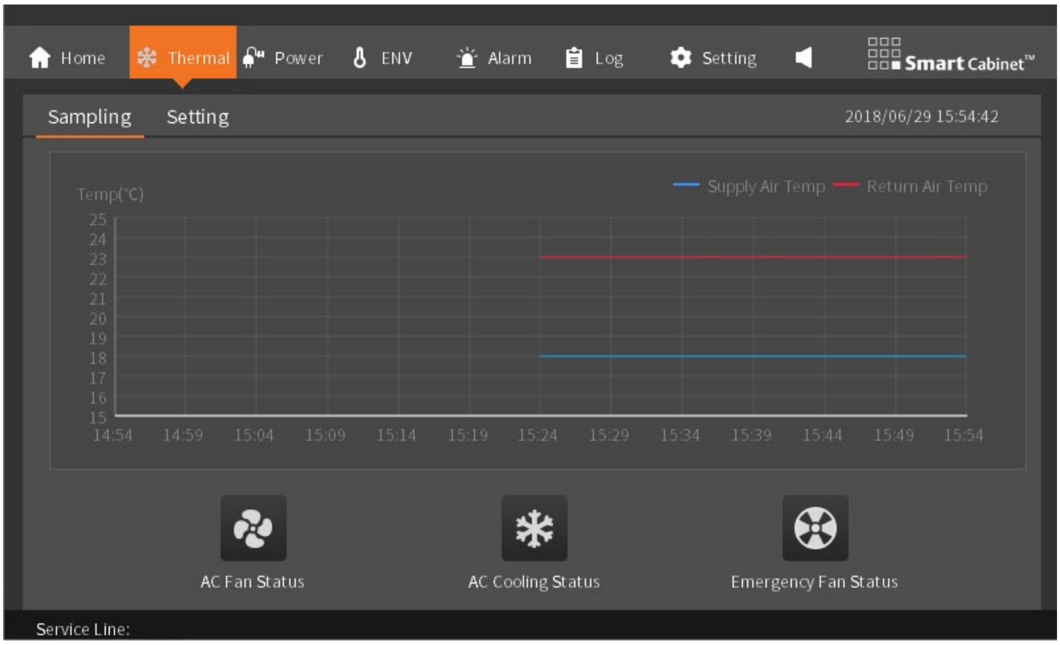

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
2018/06/29 15:54:42
Temp(°C)
Supply Air Temp
Return Air Temp
25
24
23
22
21
20
19
18
17
16
15
14:54
14:59
15:04
15:09
15:14
15:19
15:24
15:29
15:34
15:39
15:44
15:49
15:54
AC Fan Status
AC Cooling Status
Emergency Fan Status
Service Line:

Figure 3-3 Thermal management data collection screen

Enter the thermal management settings page, and enter the correct password, to view and control the normal operation, switch the page and then return to the settings page, re-enter the password. Click "Esc" to view the information on the settings page but the operational paramenters can’t be controlled or set. Refer to Figure 3-4 below for the thermal management settings page.

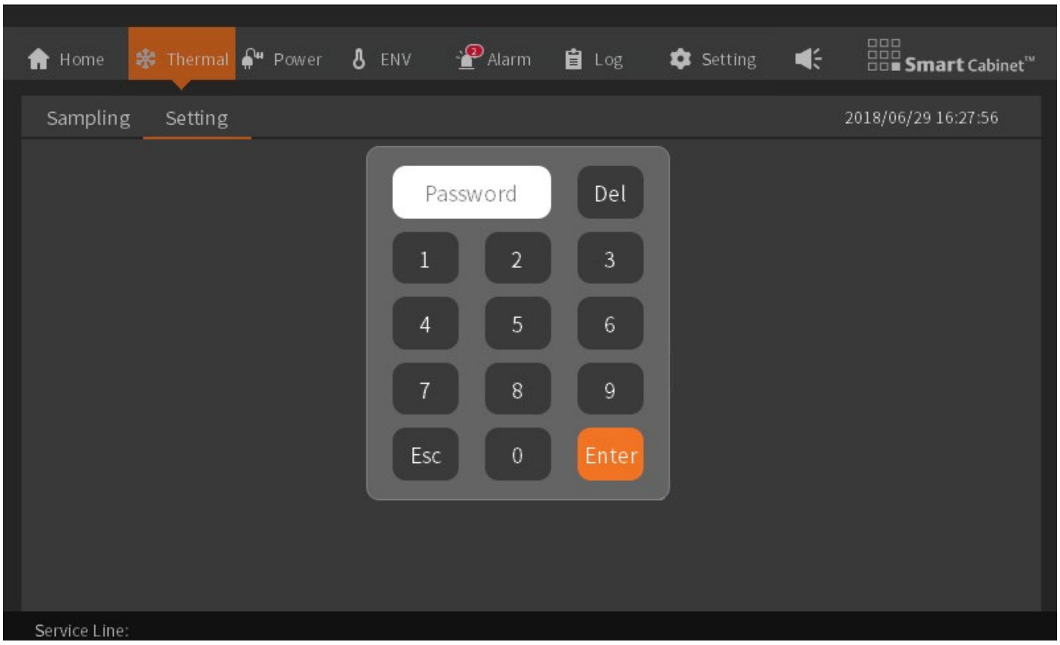
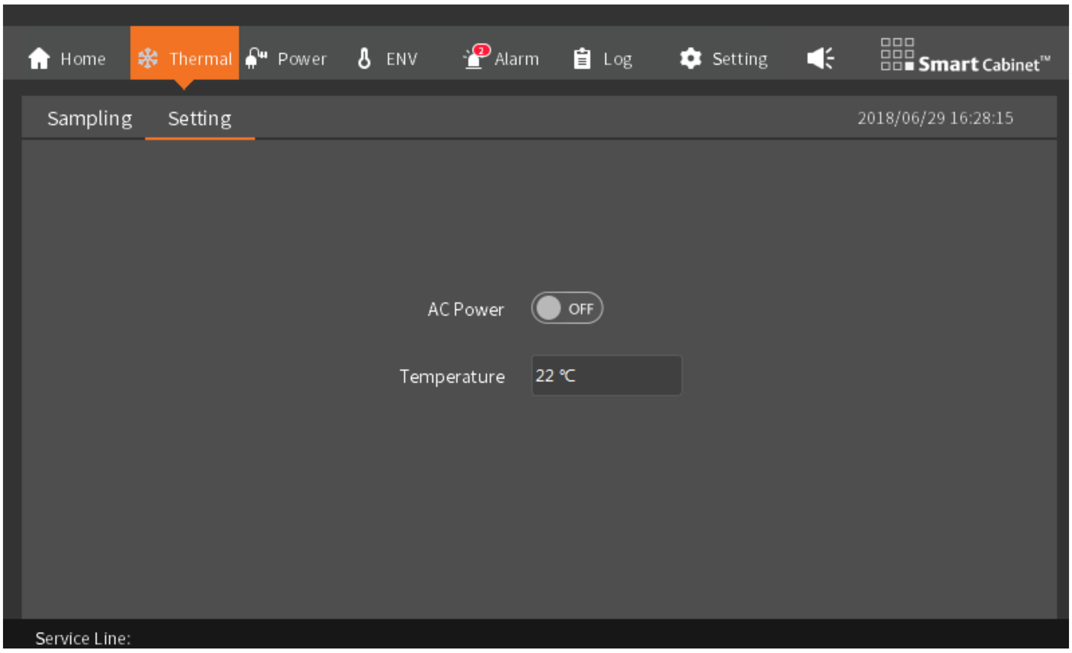

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
2018/06/29 16:27:56
Password
Del
1
2
3
4
5
6
7
8
9
Esc
0
Enter
Service Line:

Figure 3-4 Password screen for entering the thermal management settings

The air-conditioning temperature setpoint shown in Figure 3-5 can be modified as per the requirement. However, the factory default set point is 22 ℃ .


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
2018/06/29 16:28:15
Service Line:

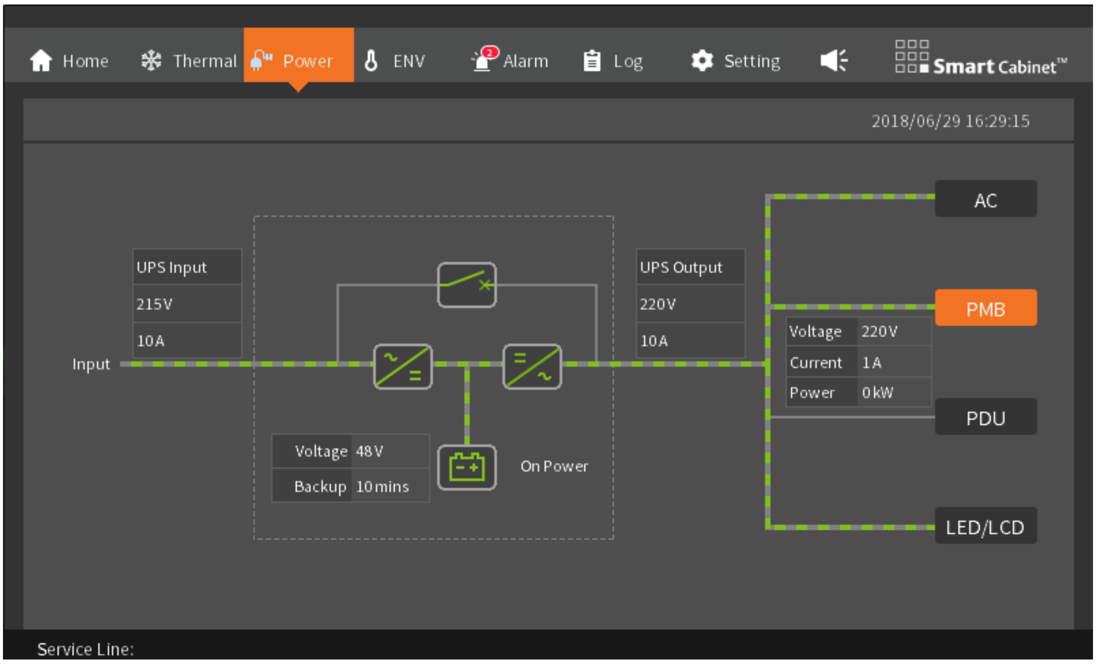
AC Power OFF

Temperature 22 ℃

Figure 3-5 Thermal management setting screen

- Supply and distribution

The power distribution page shows the entire power distribution part of the system. Whether the PDU can be clicked or not is determined by whether the system is equipped with PDUs. Figure 3-6 (A) shows no PDU, and Figure 3-6 (B) shows the PDU status which depicts the power supply parameters of the PDU.


Home
Thermal
Power
ENV
2
Alarm
Log
Setting
Smart Cabinet™
Input
AC
PMB
PDU
LED/LCD
On Power

2018/06/29 16:29:15

UPS Input
215V
10A

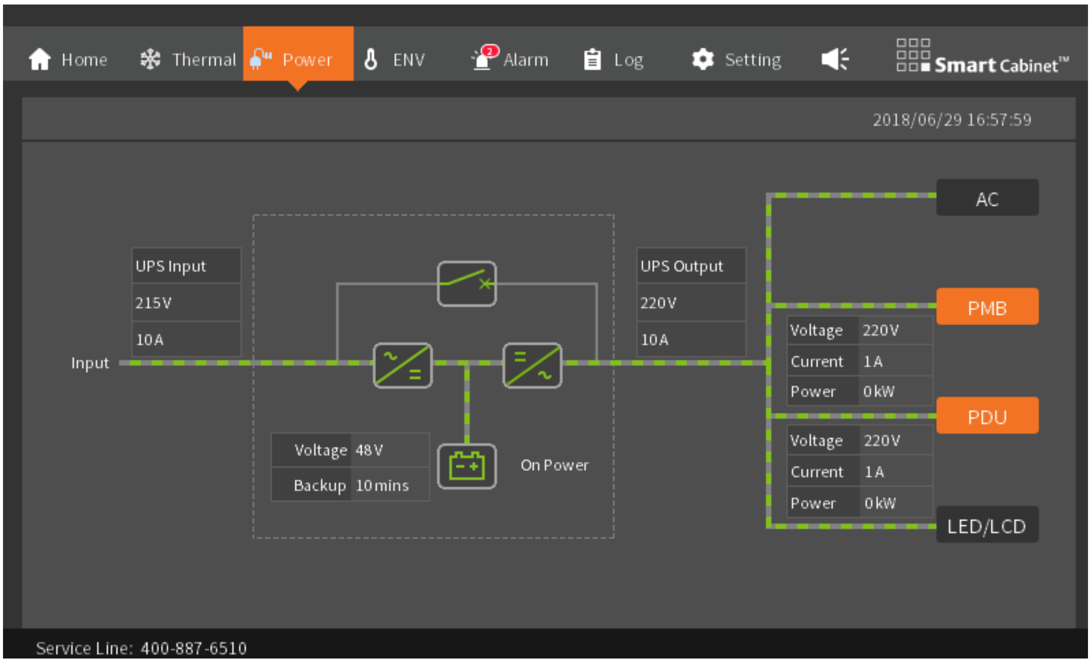
UPS Output
220V
10A

Voltage 48V
Backup 10mins

Voltage 220V
Current 1A
Power 0kW

Service Line:

(A) no PDU


Home
Thermal
Power
ENV
2
Alarm
Log
Setting
Smart Cabinet™
Input
AC
PMB
PDU
LED/LCD
On Power

2018/06/29 16:57:59

UPS Input
215V
10A

UPS Output
220V
10A

Voltage 48V
Backup 10mins

Voltage 220V
Current 1A
Power 0kW

Voltage 220V
Current 1A
Power 0kW

Service Line: 400-887-6510

(B) with a PDU

Figure 3-6 PDU screen for power supply and distribution details

In the power supply and distribution, any port of PMB and PDU (optional) can be controlled by on/off. When performing control operations, password verification is required. As shown in Figure 3-7 and Figure 3-8.

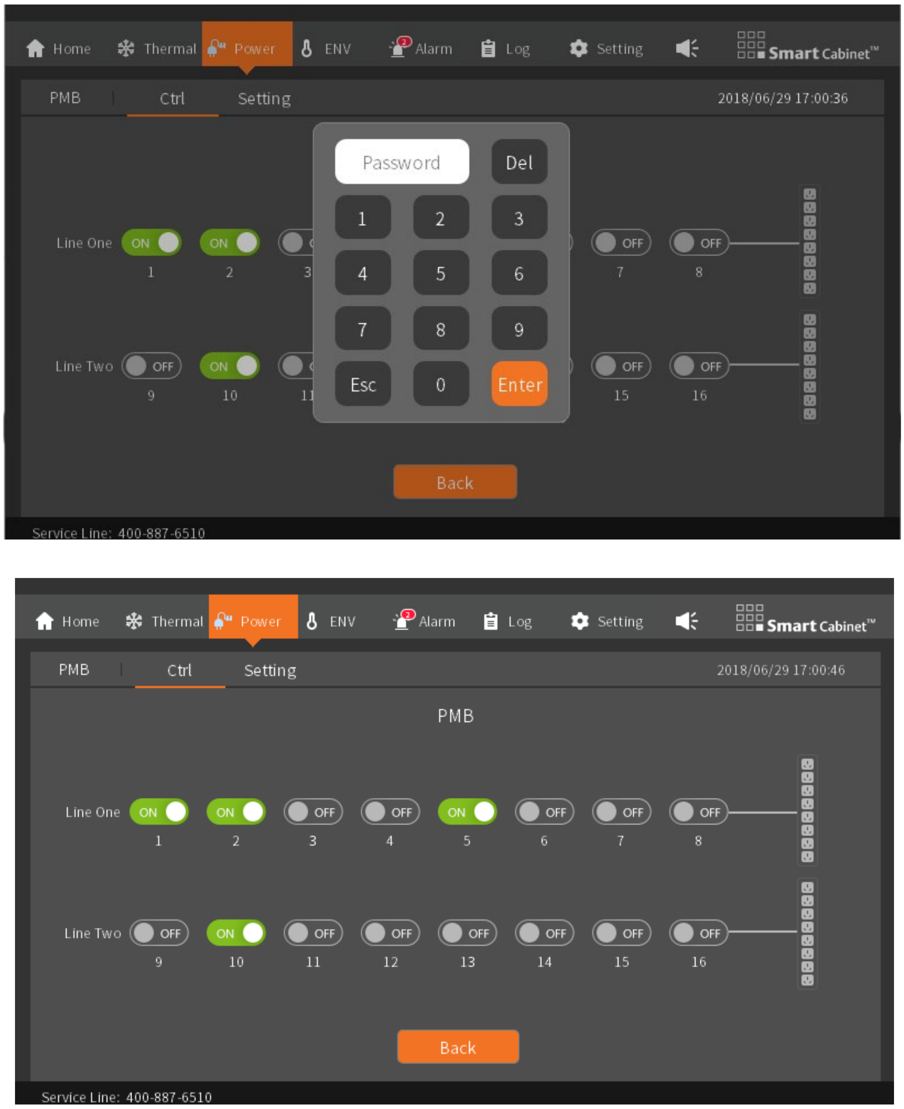

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
PMB
Ctrl
Setting
2018/06/29 17:00:36
Password
Del
1
2
3
4
5
6
7
8
9
Esc
0
Enter
Line One
Line Two
Back
Service Line: 400-887-6510
2018/06/29 17:00:46
PMB
ON
OFF
10
11
12
13
14
15
16

Figure 3-7 Supply and distribution control data screen PMB

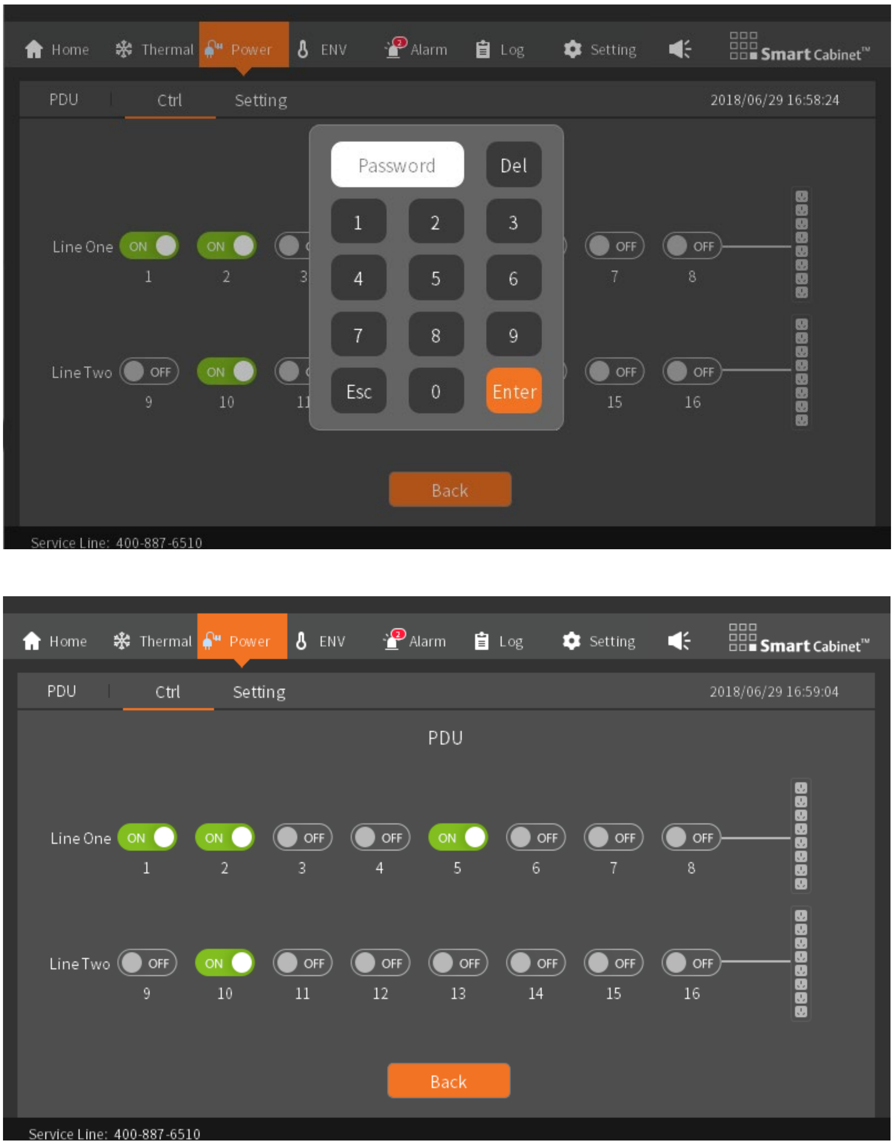

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
PDU
Ctrl
Setting
2018/06/29 16:58:24
Password
Del
1
2
3
4
5
6
7
8
9
Esc
0
Enter
Line One
Line Two
ON
OFF
Back
Service Line: 400-887-6510
2018/06/29 16:59:04
PDU
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Figure 3-8 Control PDU data screen for the distribution

- Environmental amount

The environmental quantity is similar to thermal management. The front and rear door temperatures are graphed to display data for nearly 1 hour; the lower 2 status icons show the front/rear door and flooding alarm status; where the fire icon in the environmental quantity is hidden according to whether the fire alarm is configured automatically as shown in Figure 3-9.

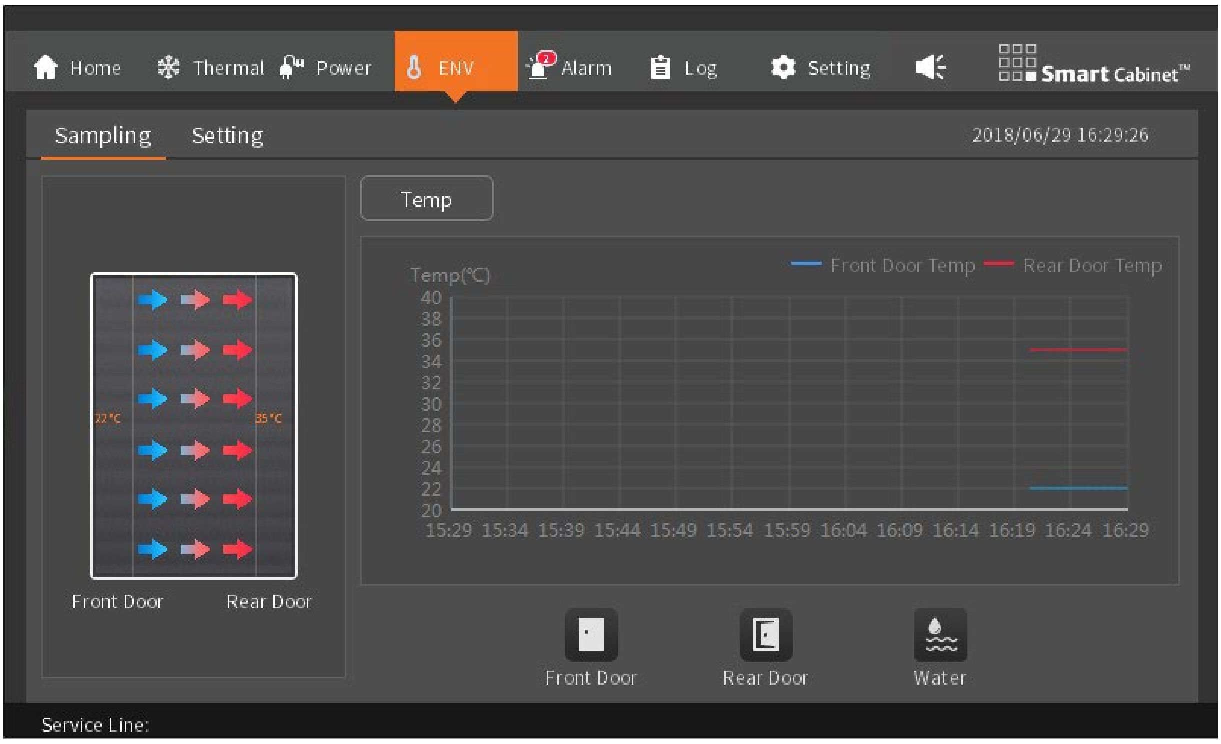
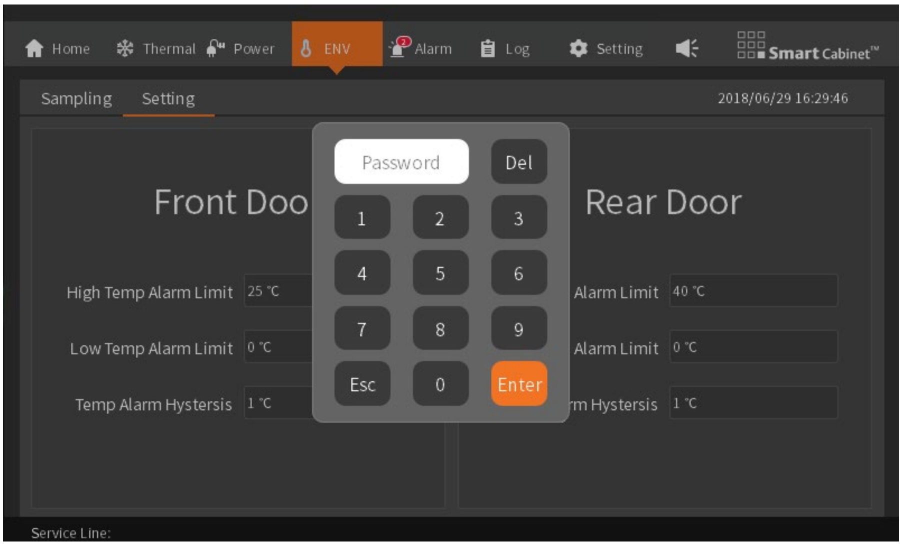

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
2018/06/29 16:29:26
Temp
Temp(℃)
Front Door Temp
Rear Door Temp
40
38
36
34
32
30
28
26
24
22
20
15:29 15:34 15:39 15:44 15:49 15:54 15:59 16:04 16:09 16:14 16:19 16:24 16:29
22 ℃
35 ℃
Front Door
Rear Door
Front Door
Rear Door
Water
Service Line:

Figure 3-9 The amount of environmental data collection screen

Setting the amount of the environment can be done only by entering the password as shown in Figure 3-10.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
2018/06/29 16:29:46
Password
Del
1
2
3
4
5
6
7
8
9
Esc
0
Enter
Front Doo
Rear Door
Service Line:

High Temp Alarm Limit 25 ℃

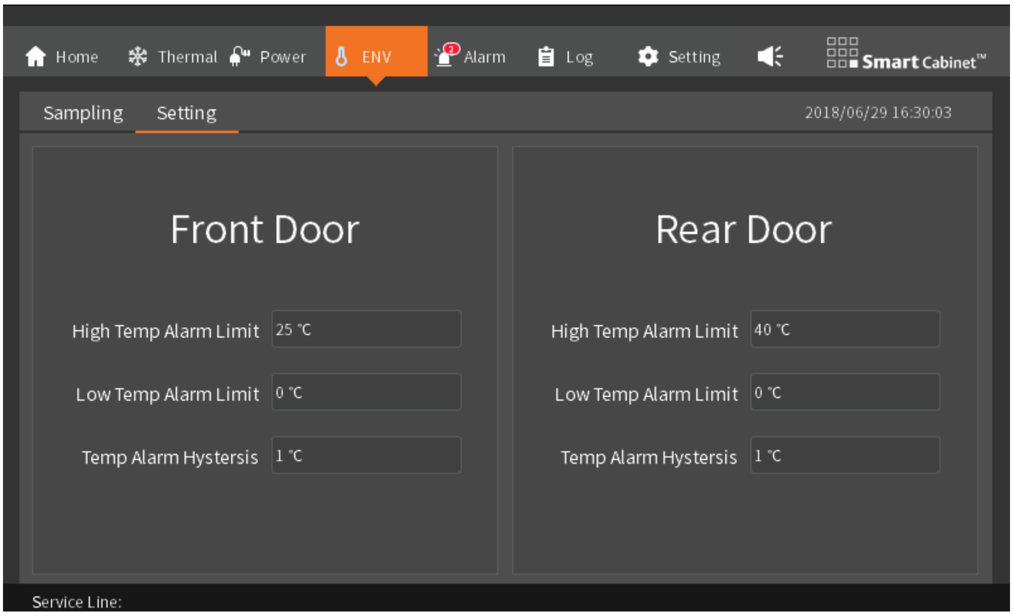
Low Temp Alarm Limit 0 ℃

Temp Alarm Hystersis 1 ℃

Alarm Limit 40 ℃

Alarm Limit 0 ℃

m Hystersis 1 ℃


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Sampling
Setting
Service Line:

2018/06/29 16:30:03

Front Door

High Temp Alarm Limit: 25 ℃

Low Temp Alarm Limit: 0 ℃

Temp Alarm Hystersis: 1 ℃

Rear Door

High Temp Alarm Limit: 40 ℃

Low Temp Alarm Limit: 0 ℃

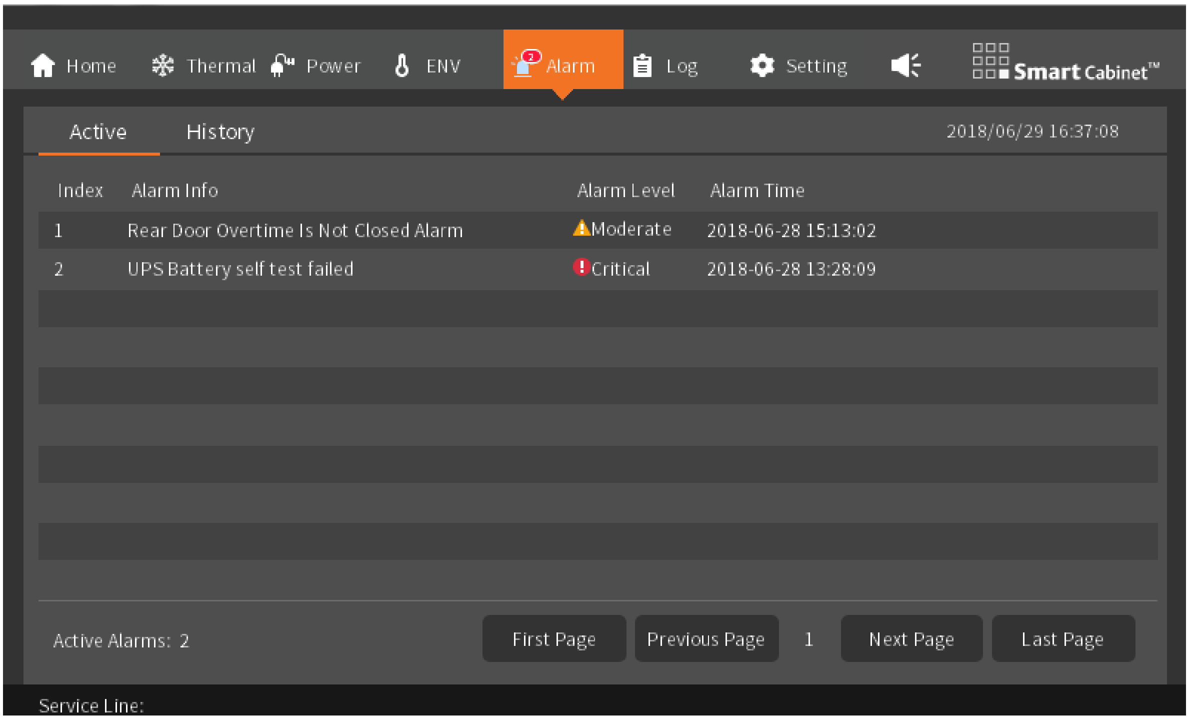
Temp Alarm Hystersis: 1 ℃

Figure 3-10 Set the amount of environmental data screen (requires a password to enter)

- Alarm

Alarm screen displays the current alarms and historical alarm system.

The current warning alarm lists the various information systems that currently exist, each containing an alarm warning information content, alarm levels (general alarm, major alarm, emergency alarm), alarm time, by viewing the alarm information, the user can accurately understand the current system is operational state, and timely processing of alarm information to ensure that the system is stable and operating as required. The same is shown in Figure 3-11.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Active
History
First Page
Previous Page
1
Next Page
Last Page
Service Line:

2018/06/29 16:37:08

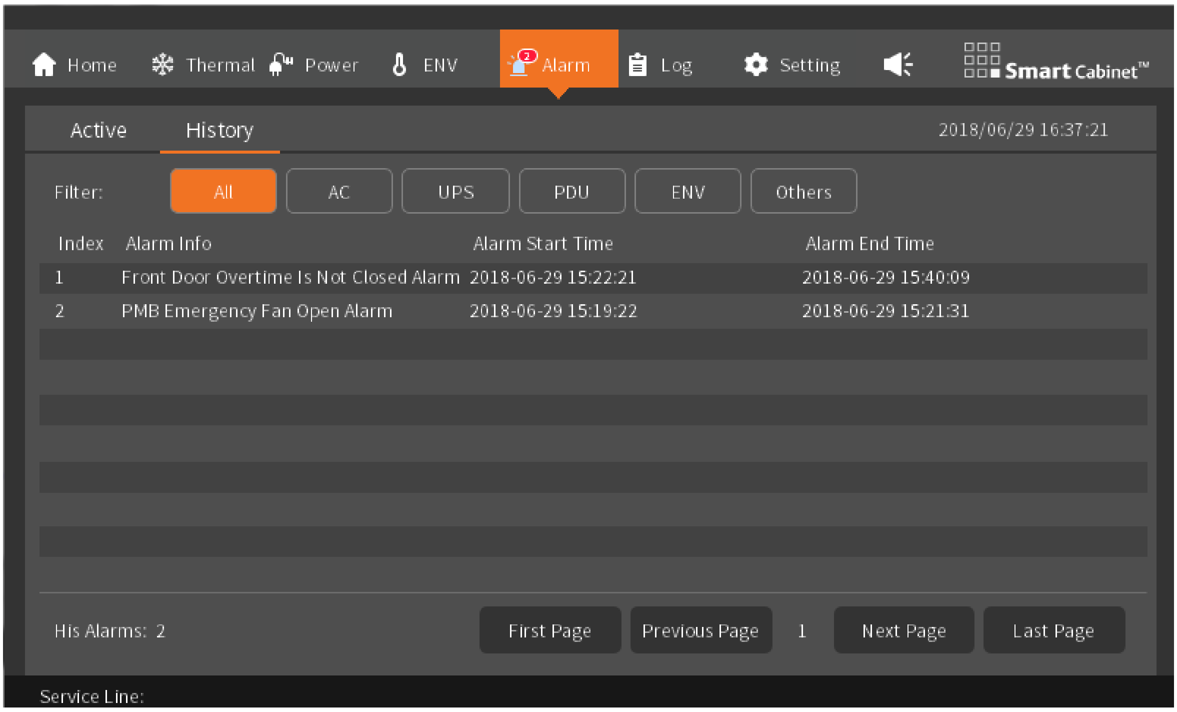
Index	Alarm Info	Alarm Level	Alarm Time
1	Rear Door Overtime Is Not Closed Alarm	⚠Moderate	2018-06-28 15:13:02
2	UPS Battery self test failed	❗Critical	2018-06-28 13:28:09

Active Alarms: 2

Figure 3-11 The current warning picture

Historical alarm information can be viewed from a week which can quickly retrieve information of the main module of the system. The interface can set the alarm for the entire cooling unit, UPS, PDU, environmental quantities and other components as well. Any option to filter out the corresponding alarm list, alarm start time, end time alarm, alarm information can be done by clicking on the home page, previous page, next page, last page, etc. page view as shown in Figure 3-12.

Historical alarm information system allows users to fully understand the operational status of the system.



2018/06/29 16:37:21

Index	Alarm Info	Alarm Start Time	Alarm End Time
1	Front Door Overtime Is Not Closed Alarm	2018-06-29 15:22:21	2018-06-29 15:40:09
2	PMB Emergency Fan Open Alarm	2018-06-29 15:19:22	2018-06-29 15:21:31

His Alarms: 2

Service Line:

Figure 3-12 PDU screen Alarm history page

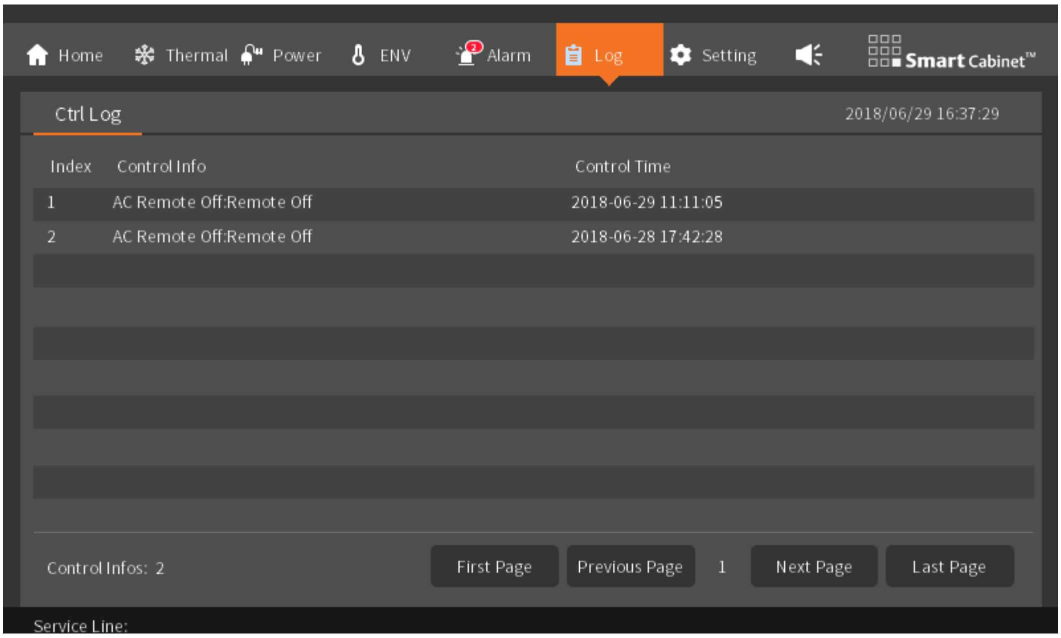
- Buzzer:

There is a menu bar at the top right corner of the home page🔊. When an alarm occurs, the alarm buzzer beeps for about 5 minutes until the next alarm is generated, else the buzzers shuts down after 5 minutes. To shut the buzzer manually, click on🔊 on the display screen,🔈.

- Log

The log interface lists the control operations issued by the LCD local display in the last week, such as the air conditioner's power on/off, supply and return air temperature settings, temperature hysteresis setting, etc. User's ownership can be viewed from the control log, control information and control time as shown in *Figure 3-13*.

For other control commands sent through the WEB page, please visit the WEB page to control the log query related operation records.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
First Page
Previous Page
1
Next Page
Last Page

Ctrl Log 2018/06/29 16:37:29

Index	Control Info	Control Time
1	AC Remote Off:Remote Off	2018-06-29 11:11:05
2	AC Remote Off:Remote Off	2018-06-28 17:42:28

Control Infos: 2

Service Line:

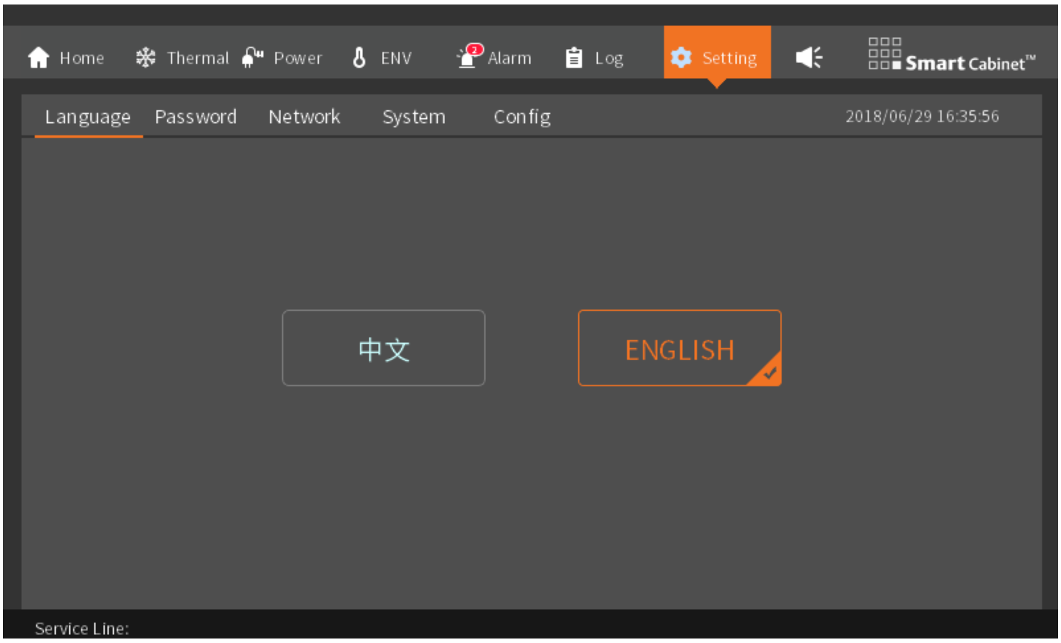
Figure 3-13 Log interface

- Set up

Page contains language, password, network, system, set up five options.

Language

Switch between the two built-in LCD for local display interface language as shown in Figure 3-14.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config

2018/06/29 16:35:56

中文 [✓ ENGLISH]

Service Line:

Figure 3-14 Language settings

Password:

Password (default is "1234") for controlling the setting authority, after the air conditioner temperature setting switch and the need to enter the correct password has permission to operate. Figure 3-15.

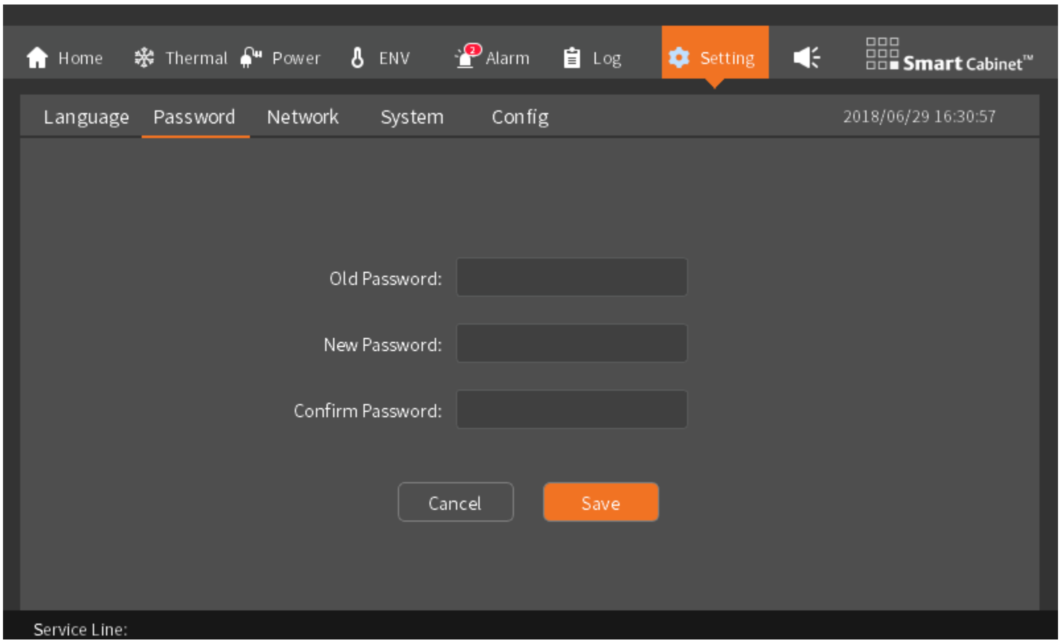

Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config
2018/06/29 16:30:57
Old Password:
New Password:
Confirm Password:
Cancel
Save
Service Line:

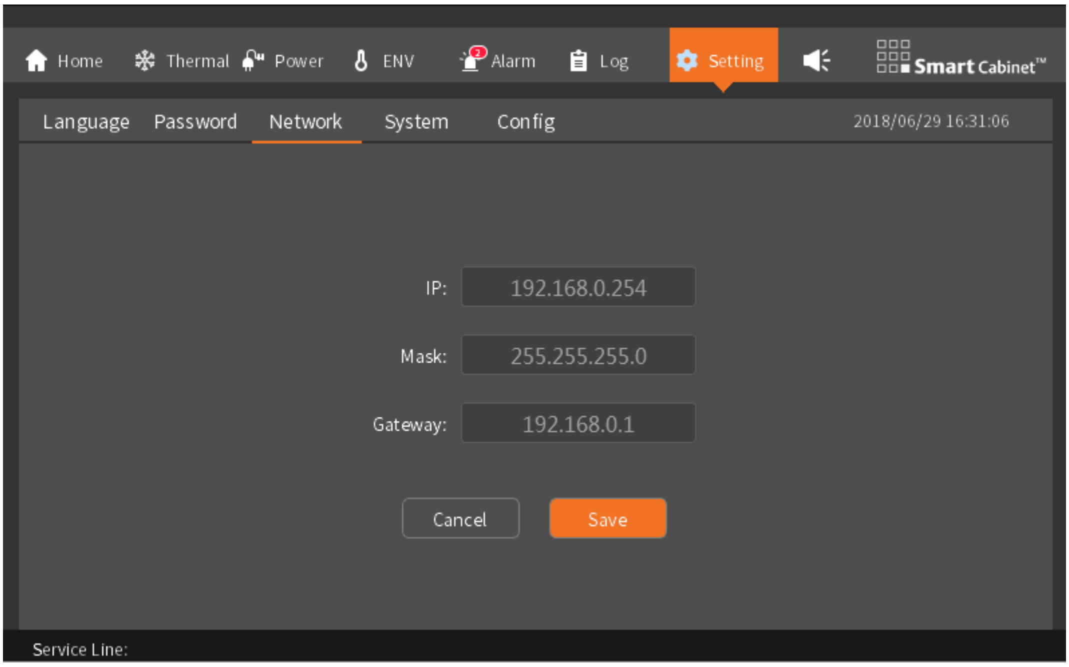
Figure 3-15 PDU screen Password modification screen

Network

Used to query and modify the IP address of the SmartCabinet 2-P intelligent monitoring unit. To modify the system NIC (Network Integration Card) information,

- Click the input box of the corresponding NIC information,
- Enter the IP address information to be set in the string format,
- Click the save button, and enter the LCD local display password,
- The IP address information will be sent to the control system,
- Set New IP.
- Connect the external PC to the corresponding network port,
- Access the corresponding network address,
- Log in to the system WEB page,
- View the running status of the system in real time on the PC side, such as system alarm information, remote opening of smart door lock, air conditioning opening and closing and temperature. Settings, etc., to achieve remote access to the system.

Figure 3-16 shows the IP address setting screen.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config
2018/06/29 16:31:06
Cancel
Save
Service Line:

IP: 192.168.0.254

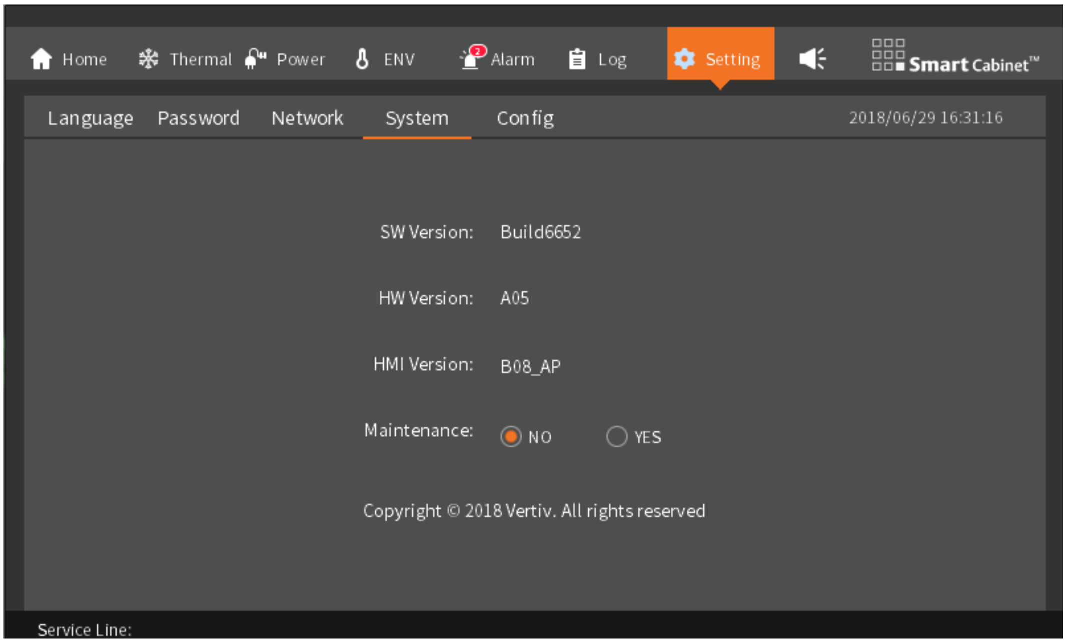
Mask: 255.255.255.0

Gateway: 192.168.0.1

Figure 3-16 IP address setting screen

System

Check the software and hardware version number and copyright information of the SmartCabinet 2-P intelligent monitoring unit. In the maintenance mode, no alarm sound is generated and the alarm icon changes. To exit the maintenance mode click “No” on the system page. The system interface is shown in Figure 3-17.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config
2018/06/29 16:31:16
Service Line:

SW Version: Build6652

HW Version: A05

HMI Version: B08_AP

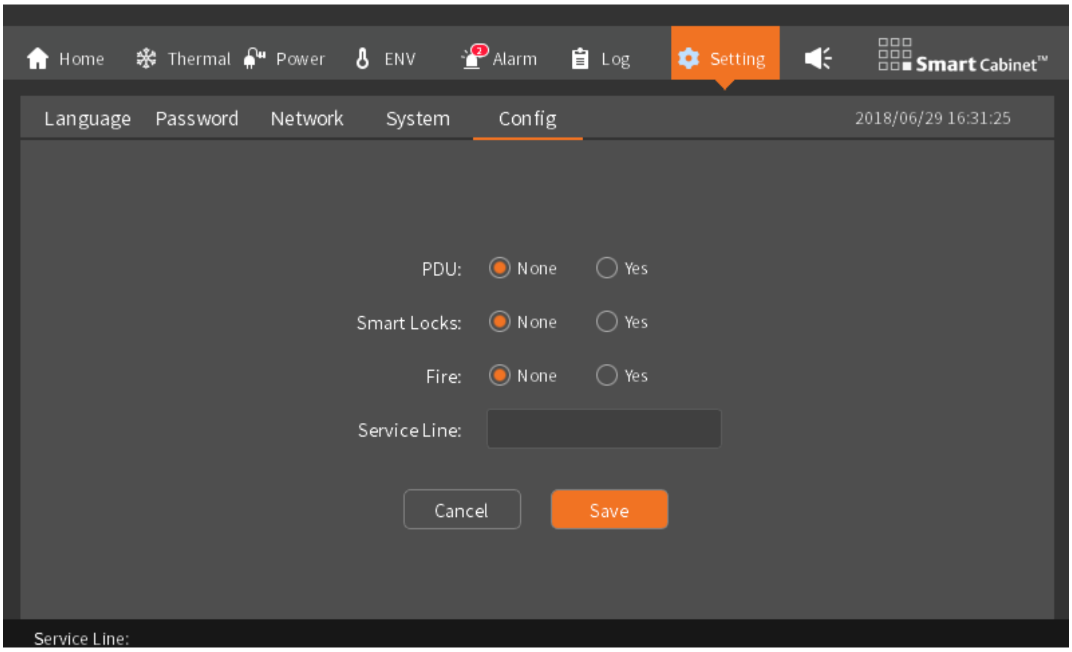
Maintenance: ● NO ○ YES

Copyright © 2018 Vertiv. All rights reserved

Figure 3-17 System information screen

Configuration

SmartCabinet 2-P is configured to be disposed PDU, smart locks and fire subrack species. Shown in Figure 3-18.


Home
Thermal
Power
ENV
Alarm
Log
Setting
Smart Cabinet™
Language
Password
Network
System
Config
2018/06/29 16:31:25
Cancel
Save
Service Line:

PDU: ● None ○ Yes

Smart Locks: ● None ○ Yes

Fire: ● None ○ Yes

Service Line:

Figure 3-18 Configuration screen

3.3 APP Web interface and intelligent monitoring unit

This chapter details how to log-related functions SmartCabinet 2-P intelligent monitoring unit and intelligent monitoring unit via the Web.

Log in preparation

To ensure normal SmartCabinet 2-P intelligent monitoring unit page function, refer to the chapter selected and set browser options.

- Check the IP address of the communication

Please confirm via the Web before you log into SmartCabinet 2-P intelligent monitoring unit IP address and test its connectivity, test method, see 4.3.2 intelligent monitoring unit maintenance problems a common Problem 1.

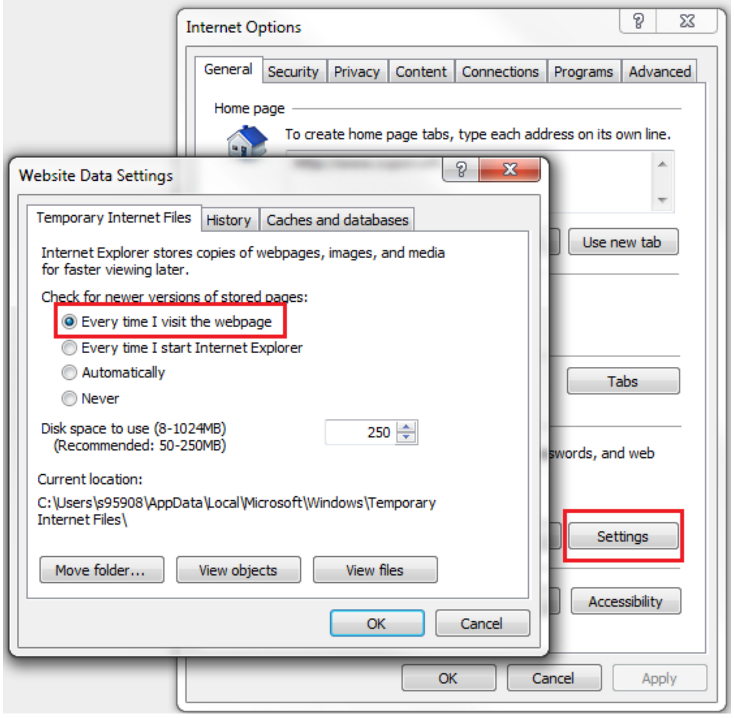
- Check your browser version

The recommended browser versions include: IE11, Firefox, Chrome, Safari.

3.3.1 Check your browser settings

- Check IE General Settings

Double-click the IE icon to run the software, click on the menu Tools -> Internet Options, click on Settings (S) General tab will check for newer versions of stored pages select Every visit to the page (E) examination, as shown in Figure 3-19.


Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Home page
Use new tab
Tabs
swords, and web
Settings
Accessibility
OK
Cancel
Apply
Website Data Settings
Temporary Internet Files
History
Caches and databases
Move folder...
View objects
View files
OK
Cancel

To create home page tabs, type each address on its own line.

Internet Explorer stores copies of webpages, images, and media for faster viewing later.

Check for newer versions of stored pages:
● Every time I visit the webpage
○ Every time I start Internet Explorer
○ Automatically
○ Never

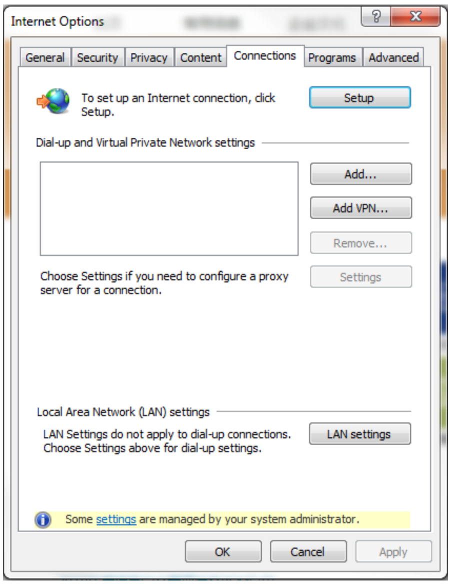
Disk space to use (8-1024MB) (Recommended: 50-250MB) 250

Current location:
C:\Users\s95908\AppData\Local\Microsoft\Windows\Temporary Internet Files\

Figure 3-19 Select Connection tab

- Check IE proxy settings

Double-click the IE icon to run the software, click the Tools menu → Internet Options, then select Connections tab, the pop-up page shown in Figure 3-20.


Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Setup
Dial-up and Virtual Private Network settings
Add...
Add VPN...
Remove...
Settings
Local Area Network (LAN) settings
LAN settings
OK
Cancel
Apply

To set up an Internet connection, click Setup.

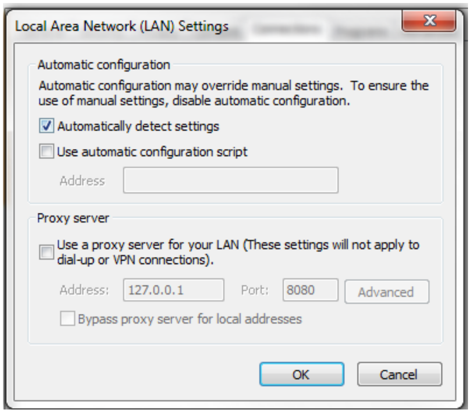
Choose Settings if you need to configure a proxy server for a connection.

LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings.

Some settings are managed by your system administrator.

Figure 3-20 Select Connection tab

Page shown in Figure 3-20, click LAN settings (L), the pop-up page shown in Figure 3-21.


Local Area Network (LAN) Settings

Automatic configuration

Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

☑ Automatically detect settings

☐ Use automatic configuration script

Address:

Proxy server

☐ Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).

Address: 127.0.0.1 Port: 8080

☐ Bypass proxy server for local addresses

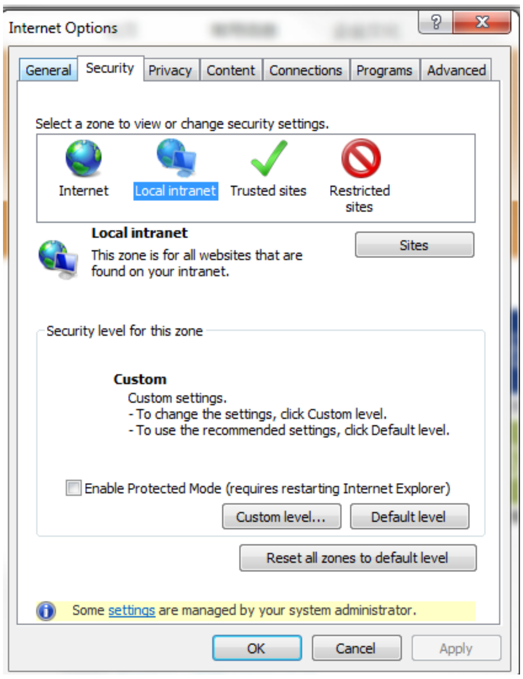
Advanced
OK
Cancel

Figure 3-21 LAN Settings

Consult the network administrator of the network to ask for the proxy configuration. If a proxy server is not required, do not check any options.

- Check the IE security settings

Double-click the IE icon to run the software, click the Tools menu → Internet Options, then select the Security tab, the pop-up page shown in Figure 3-22.


Internet Options

General
Security
Privacy
Content
Connections
Programs
Advanced

Select a zone to view or change security settings.

Internet
Local intranet
Trusted sites
Restricted sites

Local intranet

This zone is for all websites that are found on your intranet.

Security level for this zone

Custom

Custom settings.
- To change the settings, click Custom level.
- To use the recommended settings, click Default level.

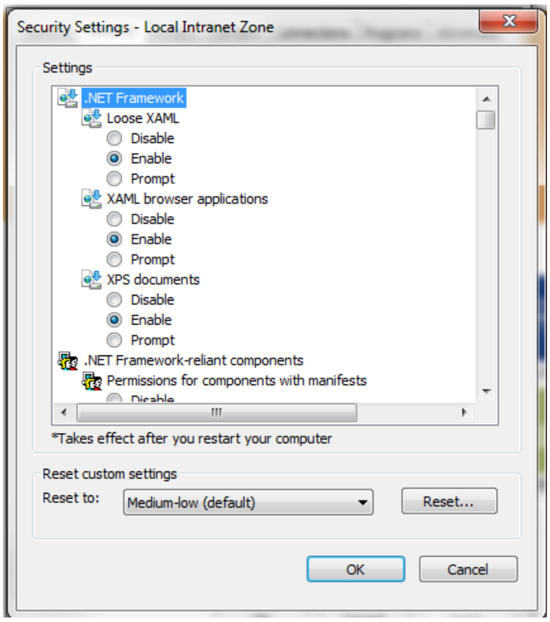
☐ Enable Protected Mode (requires restarting Internet Explorer)

Some settings are managed by your system administrator.

Sites
Custom level...
Default level
Reset all zones to default level
OK
Cancel
Apply

Figure 3-22 PDU screen Security Settings 1

Shown in Figure 3-22, select Local Intranet, and click Custom Level (C), the pop-up dialog box shown in Figure 3-23



Security Settings - Local Intranet Zone

Settings

.NET Framework
  Loose XAML
    ○ Disable
    ● Enable
    ○ Prompt
  XAML browser applications
    ○ Disable
    ● Enable
    ○ Prompt
  XPS documents
    ○ Disable
    ● Enable
    ○ Prompt
.NET Framework-reliant components
  Permissions for components with manifests
    ○ Disable

*Takes effect after you restart your computer

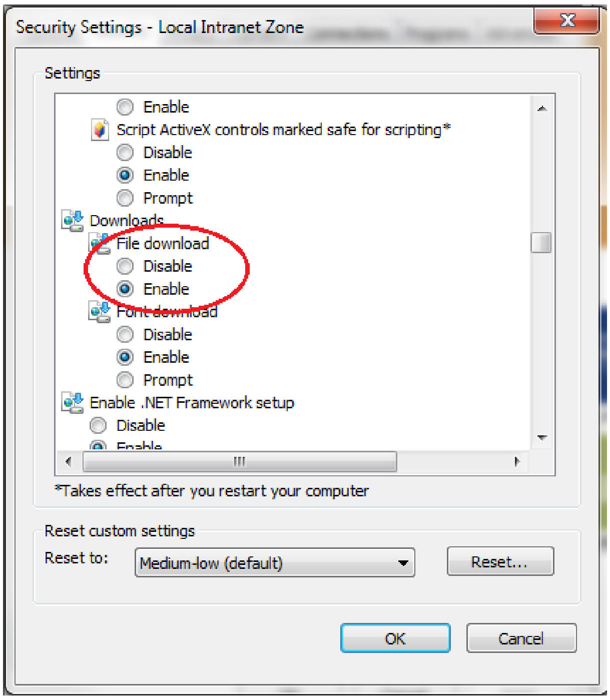
Reset custom settings

Reset to: Medium-low (default)

Figure 3-23 Security Settings 2

Figure 3-23 shows the customizations selected "low (default)", and click on reset button to end the custom settings.

As shown in Figure 3-24, set up to enable file downloads.



Security Settings - Local Intranet Zone

Settings

    ○ Enable
  Script ActiveX controls marked safe for scripting*
    ○ Disable
    ● Enable
    ○ Prompt
Downloads
  File download
    ○ Disable
    ● Enable
  Font download
    ○ Disable
    ● Enable
    ○ Prompt
Enable .NET Framework setup
  ○ Disable
  ● Enable

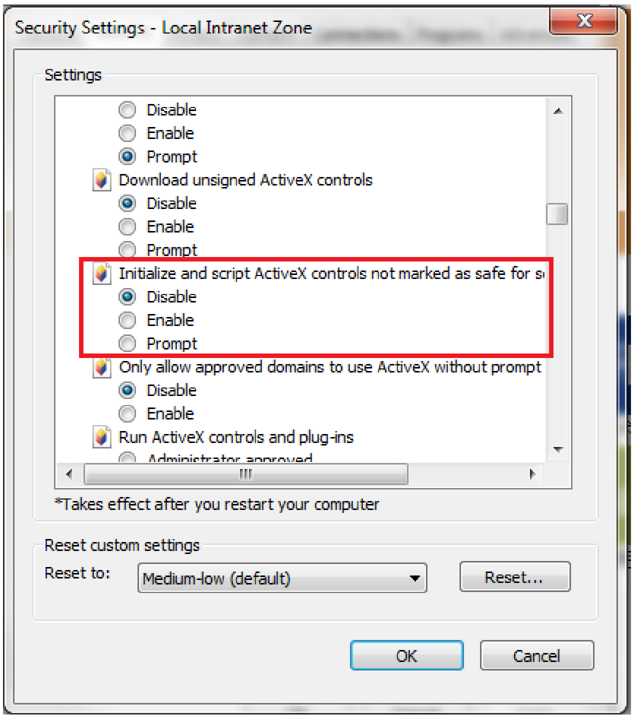
*Takes effect after you restart your computer

Reset custom settings

Reset to: Medium-low (default)

Figure 3-24 Enable file downloads

Similarly scroll up or down in the same window and set Enable for “Initialize and script ActiveX controls not marked as safe for scripting” as shown in Figure 3-25:



Security Settings - Local Intranet Zone

Settings

○ Disable
○ Enable
● Prompt

Download unsigned ActiveX controls
● Disable
○ Enable
○ Prompt

Initialize and script ActiveX controls not marked as safe for s
● Disable
○ Enable
○ Prompt

Only allow approved domains to use ActiveX without prompt
● Disable
○ Enable

Run ActiveX controls and plug-ins

*Takes effect after you restart your computer

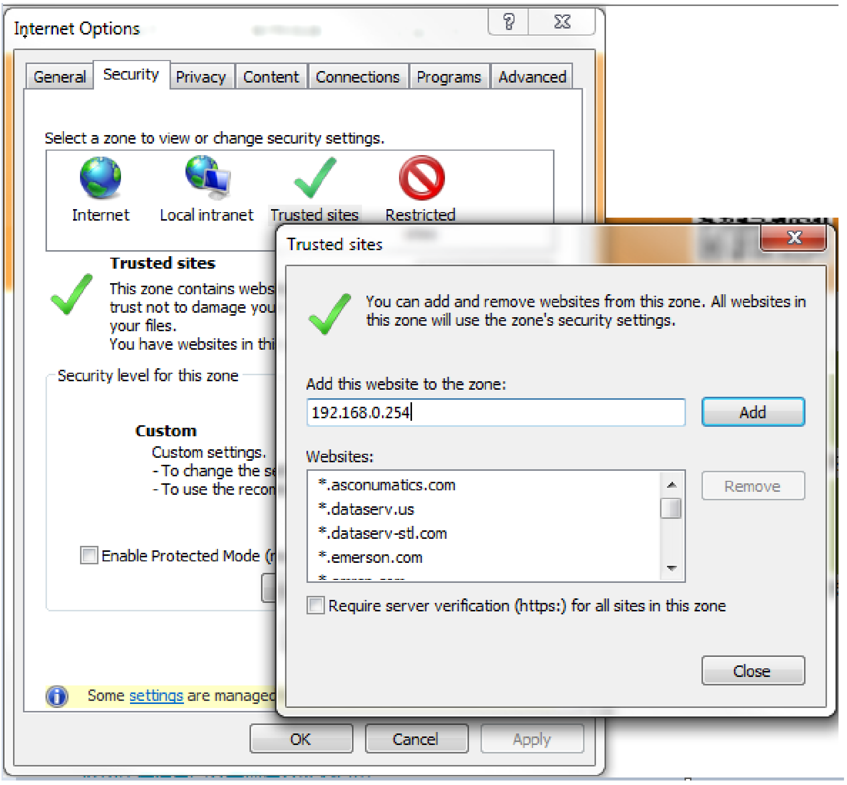
Reset custom settings

Reset to: Medium-low (default)

Reset...
OK
Cancel

Figure 3-25 Enable ActiveX Controls

Figure 3-26 shows adding the IP address of the intelligent monitoring unit to the list of trusted sites.



Internet Options

General
Security
Privacy
Content
Connections
Programs
Advanced

Select a zone to view or change security settings.

Internet
Local intranet
Trusted sites
Restricted

Trusted sites

This zone contains webs
trust not to damage you
your files.
You have websites in thi

Security level for this zone

Custom

Custom settings.
- To change the s
- To use the recon

☐ Enable Protected Mode (r

Some settings are managed

OK
Cancel
Apply

Trusted sites

You can add and remove websites from this zone. All websites in this zone will use the zone's security settings.

Add this website to the zone: 192.168.0.254

Websites:
*.asconumatics.com
*.dataserv.us
*.dataserv-stl.com
*.emerson.com

☐ Require server verification (https:) for all sites in this zone

Add
Remove
Close

Figure 3-26 PDU screen Add to trusted sites

3.4 Log intelligent monitoring unit

3.4.1 Authorized Power

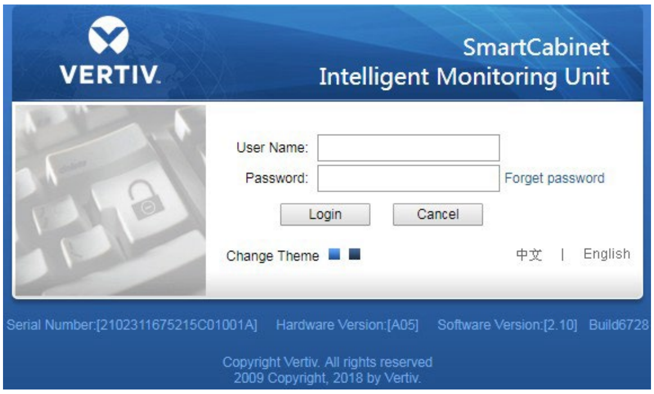
When you first log intelligent monitoring unit, start IE, in the address bar enter the IP address (default IP address is 192.168.0.254), power-pop authorization page, shown in Figure 3-27, In case of unauthorization, the boot screen will reappear to enter the correct credentials. See Figure 3-27 intelligent monitoring unit maintenance issues common problems treated in a 5 for processing.

In case of any technical grievances contact the customer service phone: 400-887-6510, and provide appropriate authentication details to customer service, to get the power-on password.

In the power-on password input text box insert the power-on password and click the OK button. If the power-on password is correct, the system automatically redirects to the login page.

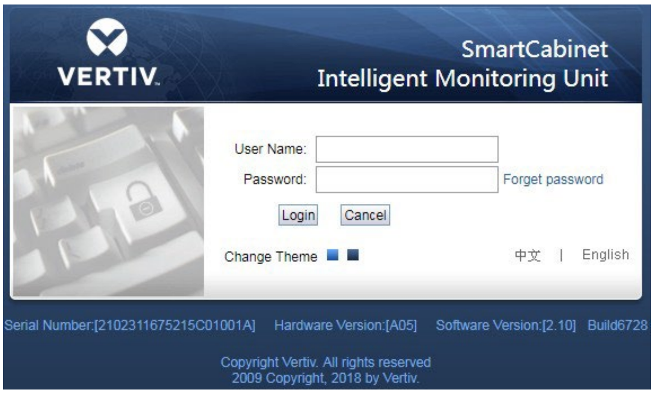
3.4.2 log in page

Start IE, in the address bar enter the IP address of the intelligent monitoring unit, the page as shown in Figure 3-29 appears. If the home page does not appear, it redirects to the login page as shown in Figure 3-27. Refer to System Settings, if there is a problem in the login page or else contact the local Vertiv customer care center.


VERTIV.
SmartCabinet
Intelligent Monitoring Unit
User Name:
Password:
Forget password
Login
Cancel
Change Theme 🟦 ■
中文 | English
Serial Number:[2102311675215C01001A]
Hardware Version:[A05]
Software Version:[2.10]
Build6728
Copyright Vertiv. All rights reserved
2009 Copyright, 2018 by Vertiv.

\

Clear blue


VERTIV.
SmartCabinet
Intelligent Monitoring Unit
User Name:
Password:
Forget password
Login
Cancel
Change Theme 🟦 ■
中文 | English
Serial Number:[2102311675215C01001A]
Hardware Version:[A05]
Software Version:[2.10]
Build6728
Copyright Vertiv. All rights reserved
2009 Copyright, 2018 by Vertiv.

Deep blue

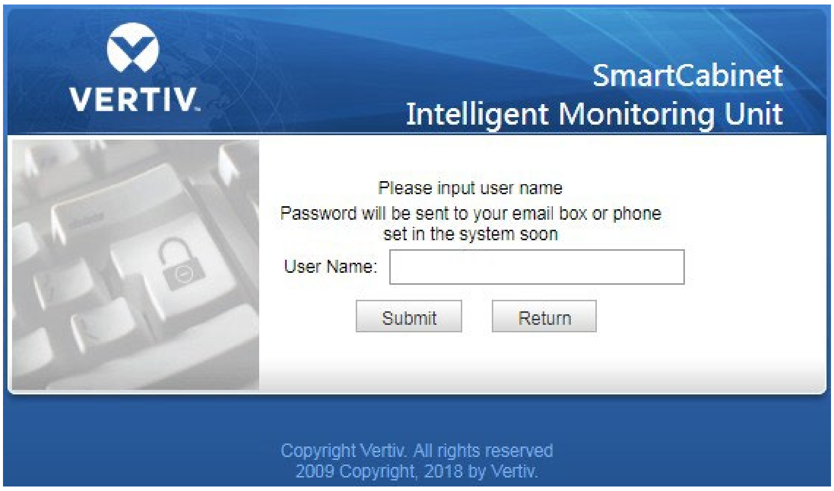
Figure 3-27 Intelligent monitoring system login page

In the login page, click on🟦or■Select the favorite theme style, Click🟦 for the the clear blue; or click ■ for deep sea blue.

Enter your user name and password (the default user name: admin, default password: Vertiv) login intelligent monitoring unit. If you enter a user name and password are correct, still unable to access the home page, see Check your browser settings to re-set the IE browser.

3.4.3 Forget password

If you forget the user password, you can login page, click Forgot Password button, the screen displays retrieve the password page, shown in Figure 3-28.



Please input user name
Password will be sent to your email box or phone set in the system soon

User Name:

Copyright Vertiv. All rights reserved
2009 Copyright, 2018 by Vertiv.

Figure 3-28 Retrieve Password page

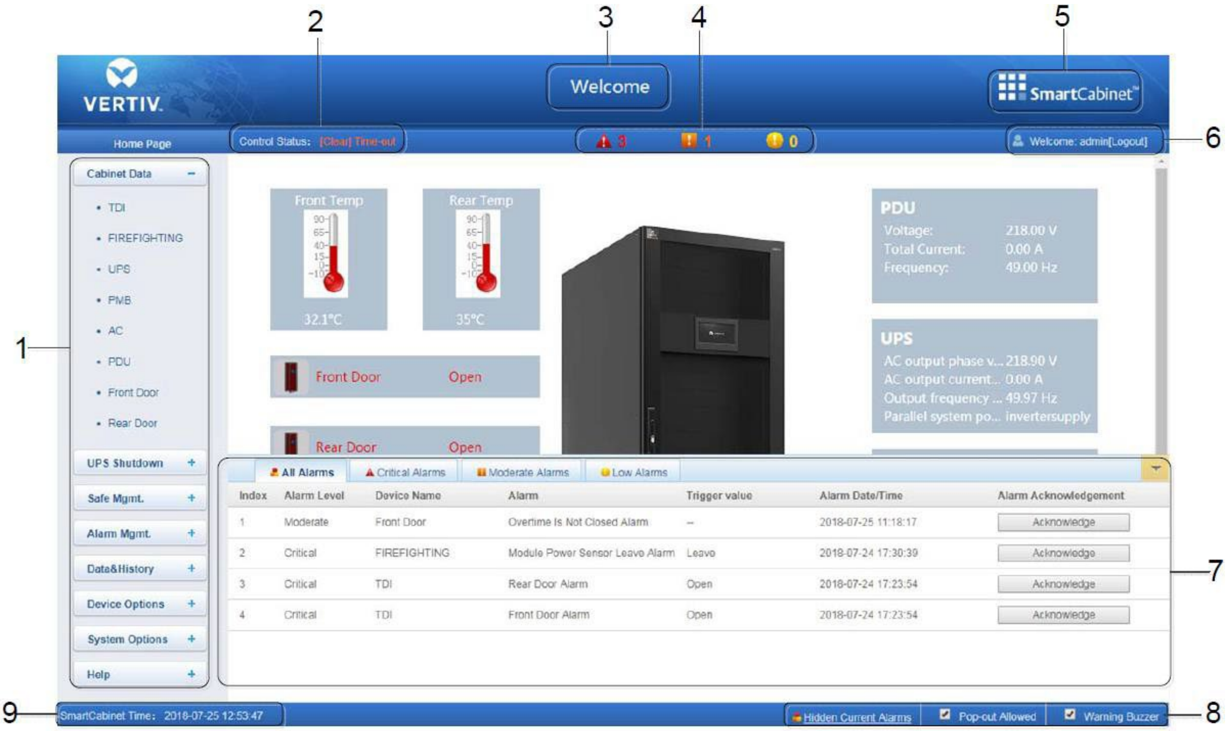
Enter your user name, click the button to retrieve the password, your password will be sent to your email or cell phone before setting; click to return the login button to cancel the operation.

- *Only if the SMS module and the mail server configuration is set up correctly with the appropriate e-mail and/or SMS parameters, a correct password would be issued by the system using the specific setting method mentioned in Alarm Notification Configuration.*
- *The password received is a random temporary password and has to be modified after successful logging into the system.*

3.4.4 Intelligent monitoring unit Home

- Home show

Home results in Figure 3-29.


2
3
4
5
6
1
7
9
8
VERTIV.
Welcome
SmartCabinet™
Home Page
Cabinet Data
TDI
FIREFIGHTING
UPS
PMB
AC
PDU
Front Door
Rear Door
UPS Shutdown
Safe Mgmt.
Alarm Mgmt.
Data&History
Device Options
System Options
Help
Front Temp
Rear Temp
90
65
40
15
0
-10
All Alarms
Critical Alarms
Moderate Alarms
Low Alarms
Hidden Current Alarms

Control Status: [Clear] Time-out

3 1 0

Welcome: admin[Logout]

Front Temp 32.1°C

Rear Temp 35°C

Front Door Open

Rear Door Open

PDU
Voltage: 218.00 V
Total Current: 0.00 A
Frequency: 49.00 Hz

UPS
AC output phase v... 218.90 V
AC output current... 0.00 A
Output frequency ... 49.97 Hz
Parallel system po... invertersupply

Index	Alarm Level	Device Name	Alarm	Trigger value	Alarm Date/Time	Alarm Acknowledgement
1	Moderate	Front Door	Overtime Is Not Closed Alarm	--	2018-07-25 11:18:17	Acknowledge
2	Critical	FIREFIGHTING	Module Power Sensor Leave Alarm	Leave	2018-07-24 17:30:39	Acknowledge
3	Critical	TDI	Rear Door Alarm	Open	2018-07-24 17:23:54	Acknowledge
4	Critical	TDI	Front Door Alarm	Open	2018-07-24 17:23:54	Acknowledge

SmartCabinet Time: 2018-07-25 12:53:47

☑ Pop-out Allowed

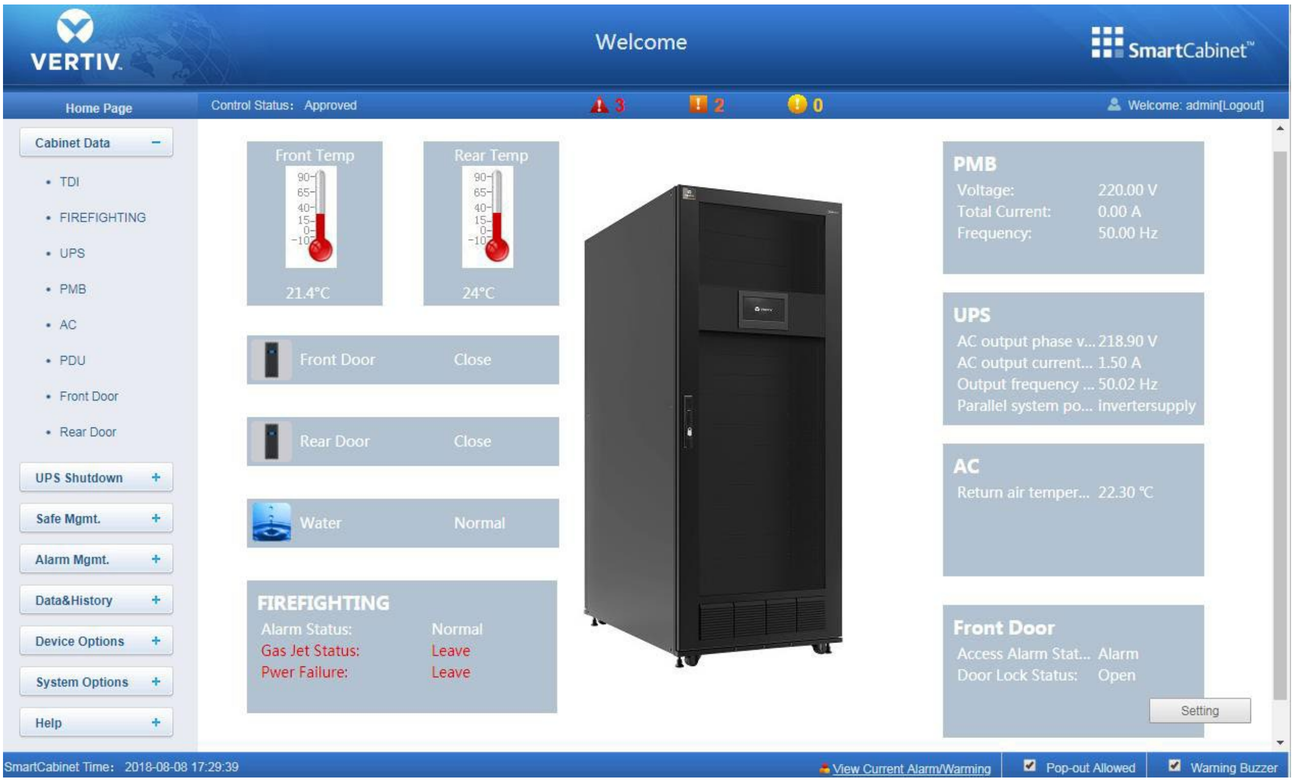
☑ Warning Buzzer

1. Menu Item
2. Controlled state
3. Each level the number of real-time alerts
4. System Title
5. Logo
6. Logout [current user]
7. Real-time alarm display list
8. Alarm alert settings
9. Time Calibrating Link

Figure 3-29 Smart Home Monitoring System

- *System abnormal operation, will produce a corresponding fault alarm, emergency ventilation system to prevent short cabinet temperature continues to rise, if not eliminate temperature failure alarm for a long time, you need to open the front and back doors to the site, and contact the service personnel with troubleshooting .*

Figure 3-29 click signal is provided to enter the set state of the home page, shown in Figure 3-30


VERTIV
Welcome
SmartCabinet™
Home Page
Cabinet Data
TDI
FIREFIGHTING
UPS
PMB
AC
PDU
Front Door
Rear Door
UPS Shutdown
Safe Mgmt.
Alarm Mgmt.
Data&History
Device Options
System Options
Help
3
2
0
Setting
View Current Alarm/Warning

Control Status: Approved

Welcome: admin[Logout]

Front Temp 21.4°C

Rear Temp 24°C

Front Door Close

Rear Door Close

Water Normal

FIREFIGHTING
Alarm Status: Normal
Gas Jet Status: Leave
Pwer Failure: Leave

PMB
Voltage: 220.00 V
Total Current: 0.00 A
Frequency: 50.00 Hz

UPS
AC output phase v... 218.90 V
AC output current... 1.50 A
Output frequency ... 50.02 Hz
Parallel system po... invertersupply

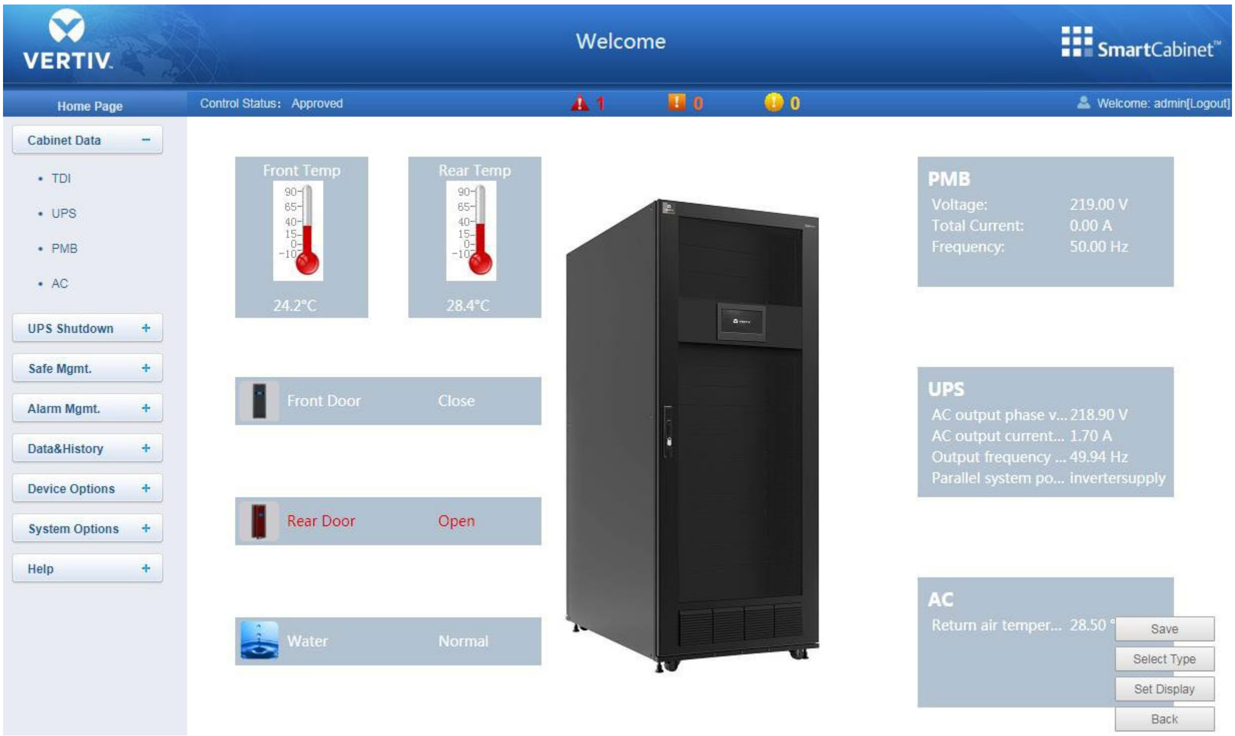
AC
Return air temper... 22.30 ℃

Front Door
Access Alarm Stat... Alarm
Door Lock Status: Open

SmartCabinet Time: 2018-08-08 17:29:39

☑ Pop-out Allowed ☑ Warning Buzzer

Figure 3-30 Setting signal


VERTIV
Welcome
SmartCabinet™
Home Page
Cabinet Data
TDI
UPS
PMB
AC
UPS Shutdown
Safe Mgmt.
Alarm Mgmt.
Data&History
Device Options
System Options
Help
1
0
0
Save
Select Type
Set Display
Back

Control Status: Approved

Welcome: admin[Logout]

Front Temp 24.2°C

Rear Temp 28.4°C

Front Door Close

Rear Door Open

Water Normal

PMB
Voltage: 219.00 V
Total Current: 0.00 A
Frequency: 50.00 Hz

UPS
AC output phase v... 218.90 V
AC output current... 1.70 A
Output frequency ... 49.94 Hz
Parallel system po... invertersupply

AC
Return air temper... 28.50

Figure 3-31 Set status

After Home enter the set state, setting is as follows:

Setting the model:

- Click the Select button models, pop-up page shown in Figure 3-32.
- Click the left button to select the model pictures.

- Once selected, click on the button to select the model, the home page will display the background image.

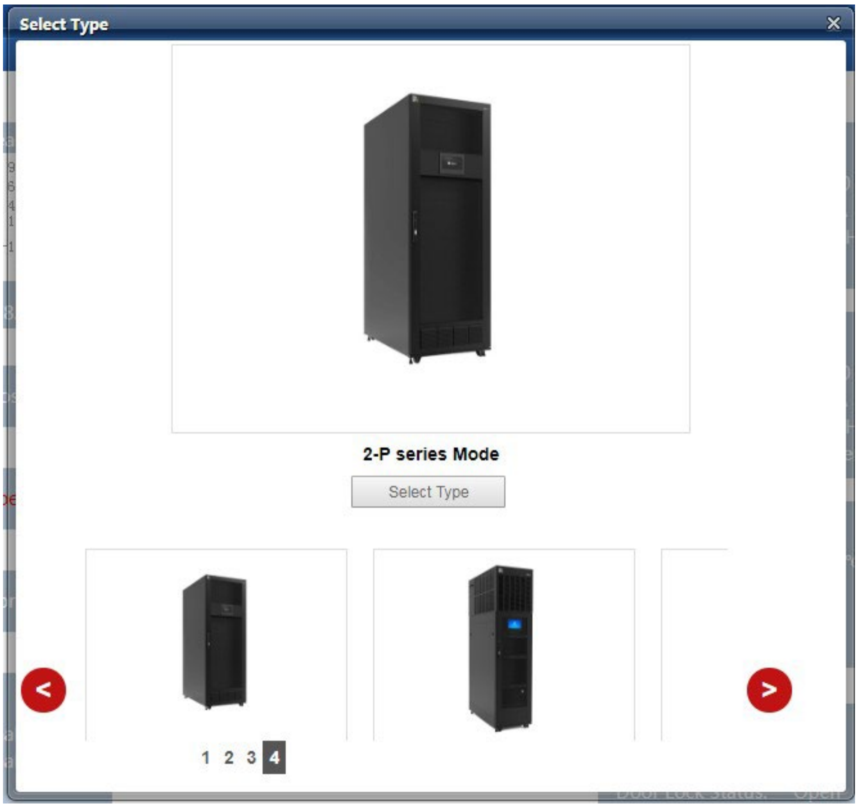
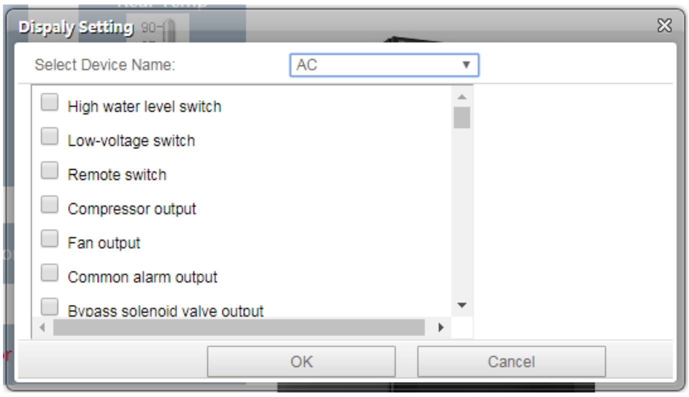


Figure 3-32 Set Background

Display setting:

Click the Display Settings button to bring up the page shown in Figure 3-33.

After selecting the device name, the device signal is displayed in the box below, the device user may need to select a signal to be displayed, but the maximum not more than 4.



Select Device Name: AC

☐ High water level switch
☐ Low-voltage switch
☐ Remote switch
☐ Compressor output
☐ Fan output
☐ Common alarm output
☐ Bypass solenoid valve output

Figure 3-33 Display setting

Save Configuration:

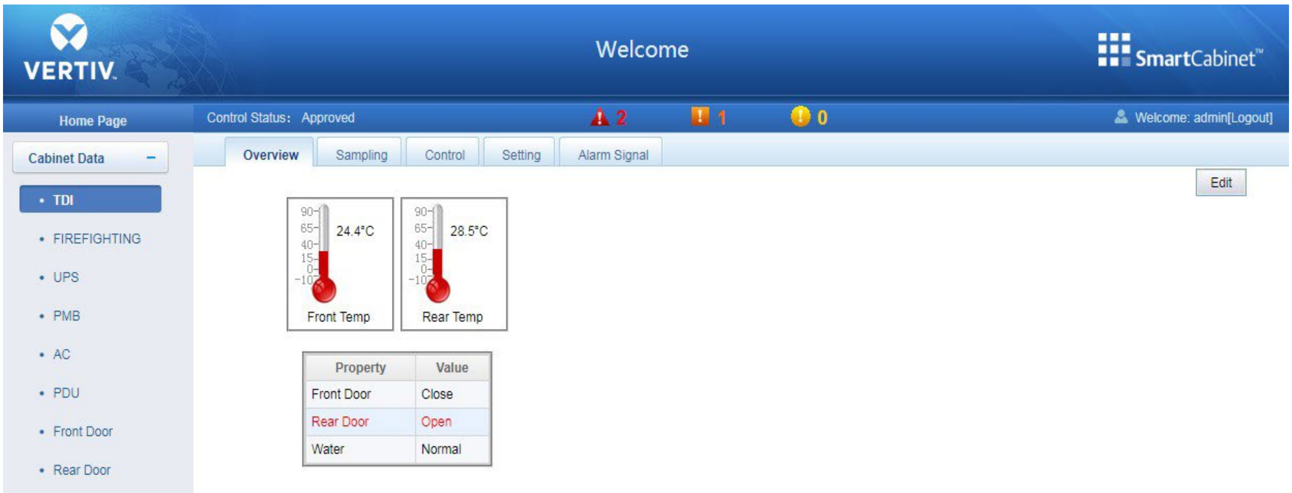
Click Save Configuration button to complete the save all configuration and returns to browse state.

- Time Calibrating Link

The lower left part of the Home Page screen displays the System time of the SmartCabinet 2-P. Clicking the SmartCabinet 2-P time will direct the user to the time calibrating page. Refer to Figure 3- to see the Time calibrating link:

- Clearing Timeout Function

When there is no operation on the webpage within 15 minutes or if the screen is dormant for 15 minutes without any action, the page will become uncontrollable and will display the Clear Time-out link as shown in Figure 3-34.


VERTIV.
Welcome
SmartCabinet™
Home Page
Cabinet Data
TDI
FIREFIGHTING
UPS
PMB
AC
PDU
Front Door
Rear Door
Overview
Sampling
Control
Setting
Alarm Signal
Edit
2
1
0
90
65
40
15
0
-10

Control Status: Approved

Welcome: admin[Logout]

24.4°C Front Temp

28.5°C Rear Temp

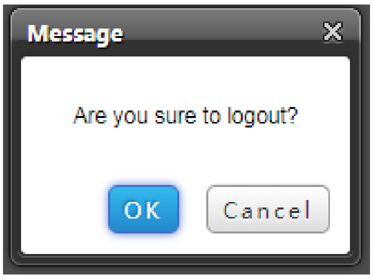
Property	Value
Front Door	Close
Rear Door	Open
Water	Normal

Figure 3-34 Controlled state

Click the Clear Time-out link. The screen will prompt for a password. Enter the password in the textbox and the controllable status will be normalized within a period of 5 seconds. Refer to Figure 3-27 to see the dialog box where the user will be prompted for a password to resume normal operation:

- Logout

Click the Logout link at the Upper right corner of the Home page (Refer Figure 3-35):


Message
OK
Cancel

Are you sure to logout?

Figure 3-35 Logout

Click on OK following which the user will be logged out of the system.

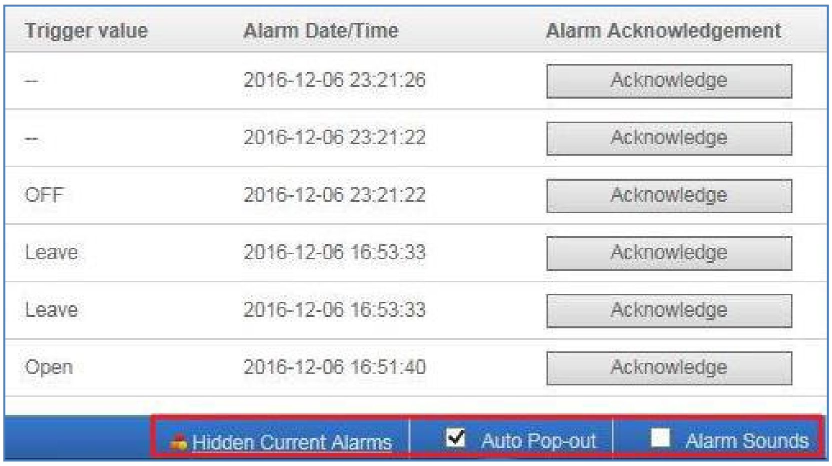
- Real-time alarm alert settings

Click the Hidden/Display Current Alarms link to view the real-time alarm displaying list.

Check the Auto Pop-out checkbox and the real-time alarm displaying list will pop up when an alarm is generated.

Check the Alarm Sounds checkbox. On selecting this option, the system will play the alarm sound through the browser when an alarm is generated.

Refer to the following Figure 3-36 to see all the options mentioned in the list located at the right corner on the bottom of the webpage.



Trigger value	Alarm Date/Time	Alarm Acknowledgement
--	2016-12-06 23:21:26	Acknowledge
--	2016-12-06 23:21:22	Acknowledge
OFF	2016-12-06 23:21:22	Acknowledge
Leave	2016-12-06 16:53:33	Acknowledge
Leave	2016-12-06 16:53:33	Acknowledge
Open	2016-12-06 16:51:40	Acknowledge

Hidden Current Alarms ☑ Auto Pop-out ☐ Alarm Sounds

Figure 3-36 Real-time Alarm Pop out settings

3.4.5 Menu Item

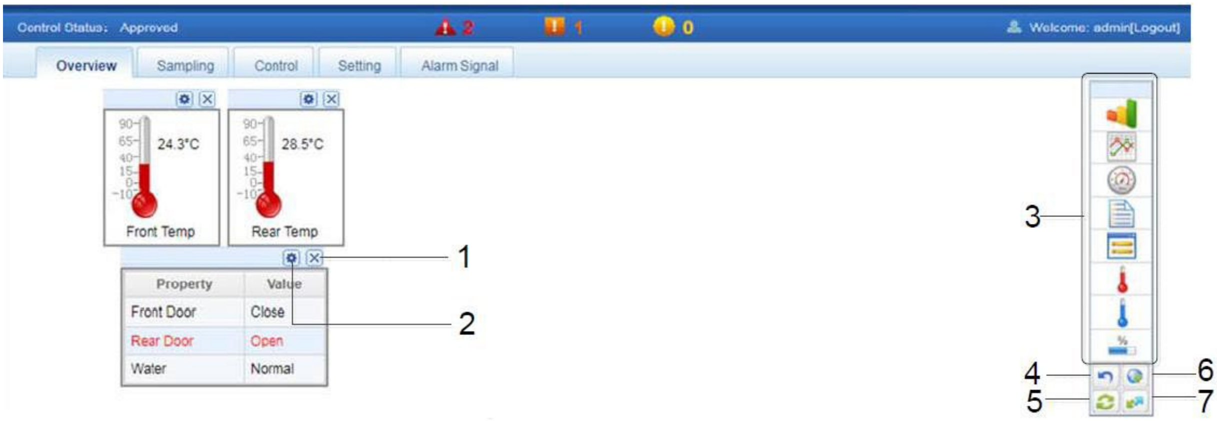
In the smart home monitoring unit, the menu item information, including Cabinet, UPS shutdown management, security management, alarm management, data management, configuration management, system settings and help information.

- Cabinet Information

Cabinet information by clicking the left menu, sub menu will appear, according to the display device, clicking on a specific device displays information with the right side of the screen will get populated with information divided into 5 sections, namely- Overview, Sampling, Control, Setting, and Alarm.

- Equipment Overview

Select Device Overview tab, click the Edit button to customize the overview page, shown in Figure 3-37.


Control Status: Approved
2
1
0
Welcome: admin[Logout]
Overview
Sampling
Control
Setting
Alarm Signal
24.3°C
Front Temp
28.5°C
Rear Temp
1
2
3
4
5
6
7

Property	Value
Front Door	Close
Rear Door	Open
Water	Normal

Figure 3-37 PDU screen Equipment Overview

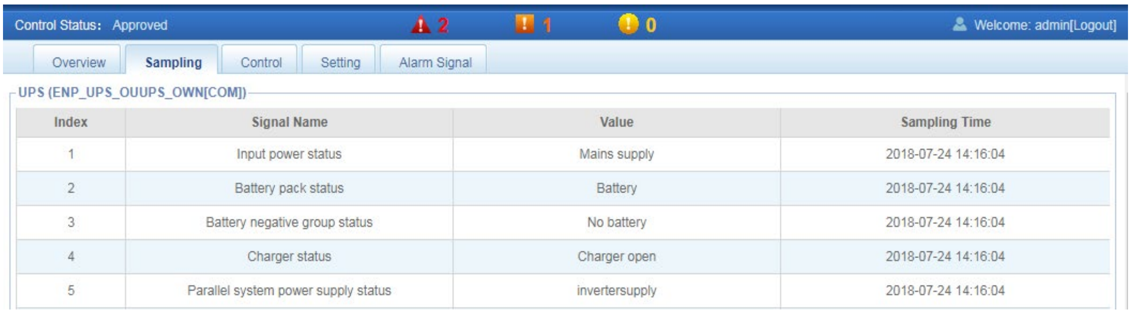
1. Remove Component icon
2. Signal Configuration icon
3. Component List
4. Back to Browse icon
5. Restore icon
6. Save icon
7. Effective to same type of equipment icon

In edit mode, click (5) Restore Default button to restore the default; click (7) the same type of equipment effective batch configuration button with other types of equipment; Click (6) Save button to save the configuration; click (4) return to the Browse button to page converted to browse state.

- *Equipment overview page has a different default control display, restore the default is restored to this state depending on the device type.*
- *Certain types of devices have specific state diagram, a state diagram which can not be deleted and is not arranged, the position only in FIG update status information, such as air conditioning, UPS and the like.*

- Acquire the Signal

Click tab to signal acquisition, signal acquisition may enter the selected page display signal acquisition device, shown in Figure 3-38.


Control Status: Approved
2
1
0
Welcome: admin[Logout]
Overview
Sampling
Control
Setting
Alarm Signal

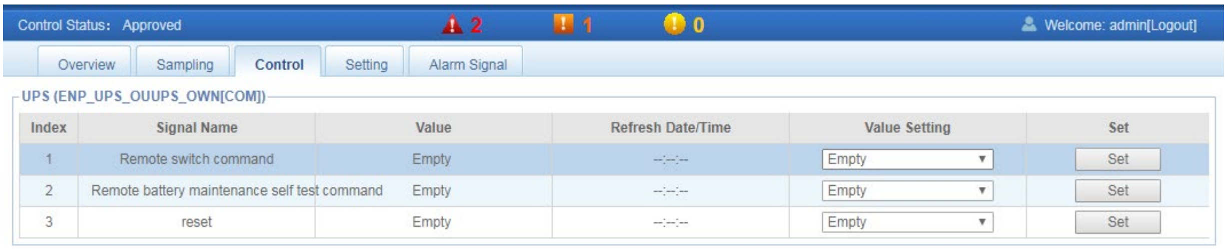
UPS (ENP_UPS_OUUPS_OWN[COM])

Index	Signal Name	Value	Sampling Time
1	Input power status	Mains supply	2018-07-24 14:16:04
2	Battery pack status	Battery	2018-07-24 14:16:04
3	Battery negative group status	No battery	2018-07-24 14:16:04
4	Charger status	Charger open	2018-07-24 14:16:04
5	Parallel system power supply status	invertersupply	2018-07-24 14:16:04

Figure 3-38 Acquire the Signal

- Control signal

Click tab control signal, the control signal into the control signal selected page display apparatus, shown in Figure 3-39.


Control Status: Approved
2
1
0
Welcome: admin[Logout]
Overview
Sampling
Control
Setting
Alarm Signal

UPS (ENP_UPS_OUUPS_OWN[COM])

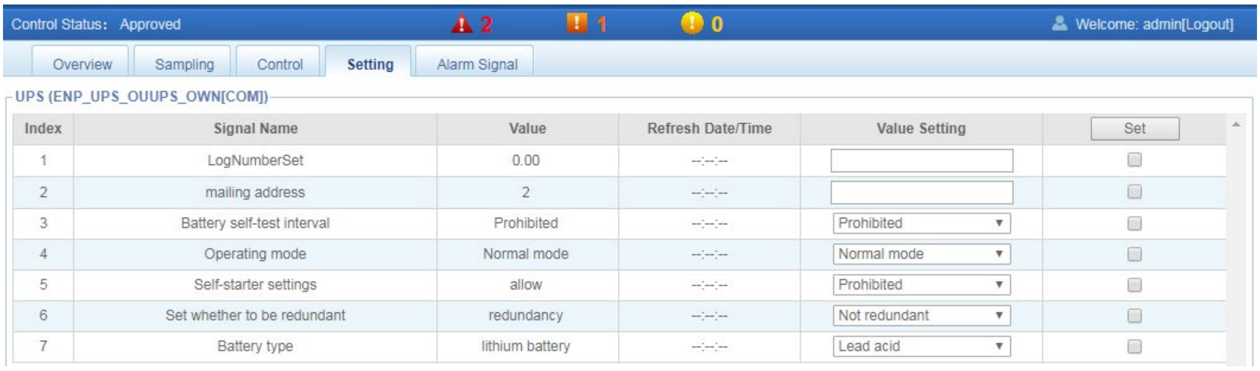
Index	Signal Name	Value	Refresh Date/Time	Value Setting	Set
1	Remote switch command	Empty	--:--:--	Empty ▾	Set
2	Remote battery maintenance self test command	Empty	--:--:--	Empty ▾	Set
3	reset	Empty	--:--:--	Empty ▾	Set

Figure 3-39 Control signal

In the drop-down box to select a set value, and then click the button for controlling the apparatus is provided.

- Setting signal

Click the Settings tab signal, the signal is set to enter the settings page displays the signal selected device, shown in Figure 3-40.


Control Status: Approved
2
1
0
Welcome: admin[Logout]
Overview
Sampling
Control
Setting
Alarm Signal

UPS (ENP_UPS_OUUPS_OWN[COM])

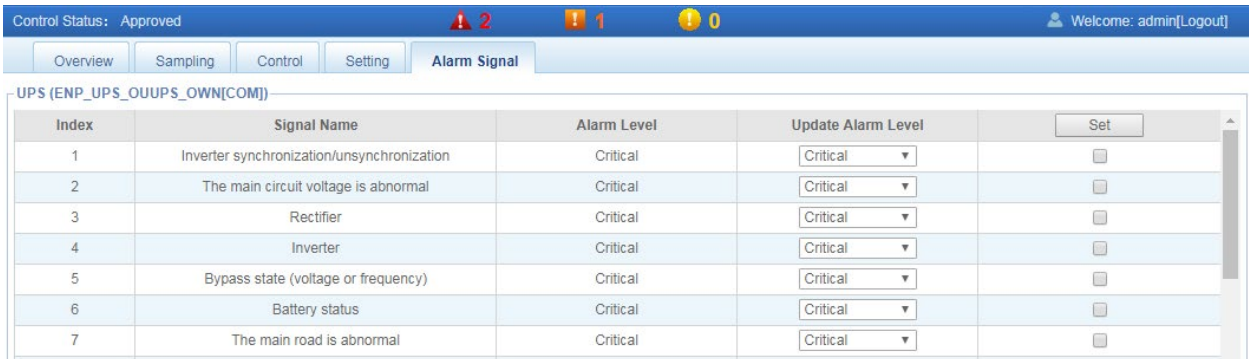
Index	Signal Name	Value	Refresh Date/Time	Value Setting	Set
1	LogNumberSet	0.00	--:--:--		☐
2	mailing address	2	--:--:--		☐
3	Battery self-test interval	Prohibited	--:--:--	Prohibited ▾	☐
4	Operating mode	Normal mode	--:--:--	Normal mode ▾	☐
5	Self-starter settings	allow	--:--:--	Prohibited ▾	☐
6	Set whether to be redundant	redundancy	--:--:--	Not redundant ▾	☐
7	Battery type	lithium battery	--:--:--	Lead acid ▾	☐

Figure 3-40 Setting signal

A maximum of 16 signal settings can be configured at any given point of time.

- Warning signal

Click alarm signal tab to enter the page displaying the alarm signal warning signal for the selected device, shown in Figure 3-41.


Control Status: Approved
2
1
0
Welcome: admin[Logout]
Overview
Sampling
Control
Setting
Alarm Signal

UPS (ENP_UPS_OUUPS_OWN[COM])

Index	Signal Name	Alarm Level	Update Alarm Level	Set
1	Inverter synchronization/unsynchronization	Critical	Critical ▾	☐
2	The main circuit voltage is abnormal	Critical	Critical ▾	☐
3	Rectifier	Critical	Critical ▾	☐
4	Inverter	Critical	Critical ▾	☐
5	Bypass state (voltage or frequency)	Critical	Critical ▾	☐
6	Battery status	Critical	Critical ▾	☐
7	The main road is abnormal	Critical	Critical ▾	☐

Figure 3-41 Warning signal

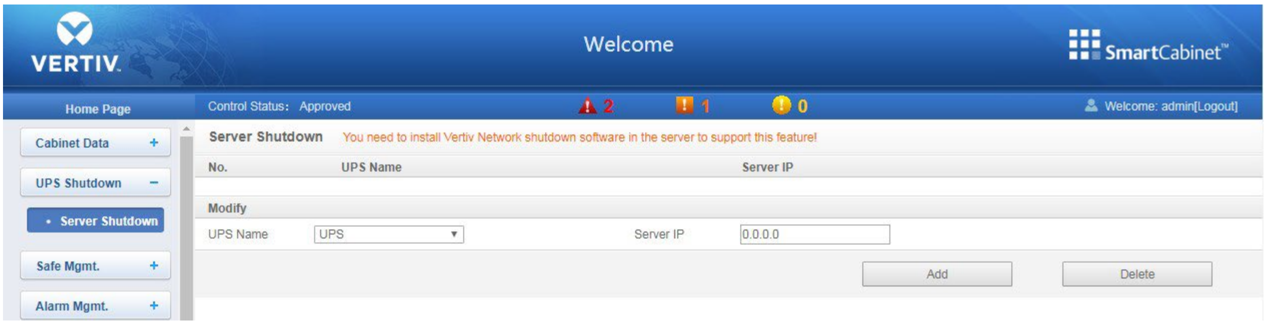
Batch can be set for the level alarm signal, each time setting the maximum quantities of 16 signals.

3.4.6 UPS shutdown management

In SmartCabinet 2-P intelligent monitoring system home page, click on the left menu UPS shutdown management, display server shutdown.

- Server shutdown

Click on the server is down submenu under the UPS shutdown management menu, pop-server shutdown settings page, shown in Figure 3-42.



Control Status: Approved

Server Shutdown You need to install Vertiv Network shutdown software in the server to support this feature!

No.	UPS Name	Server IP

Modify

UPS Name: UPS

Server IP: 0.0.0.0

Figure 3-42 Server Shutdown Settings page

In the server is down, the system prompts: "You need to install Vertiv network shutdown software on the server in order to use this feature!."

In the server shutdown settings page, the user can add and delete server shutdown task.

Following is the step-by-step set of procedures that are required to add a server to the shutdown process:

- Select a UPS from the UPS Name dropdown menu.
- Enter the IP address of the server in the Server IP field.
- Click on the Add button to add the Server Shutdown task for a specific server.

- *To use the Server Shutdown function, install the* ***Vertiv Network Shutdown*** *software in the server.*

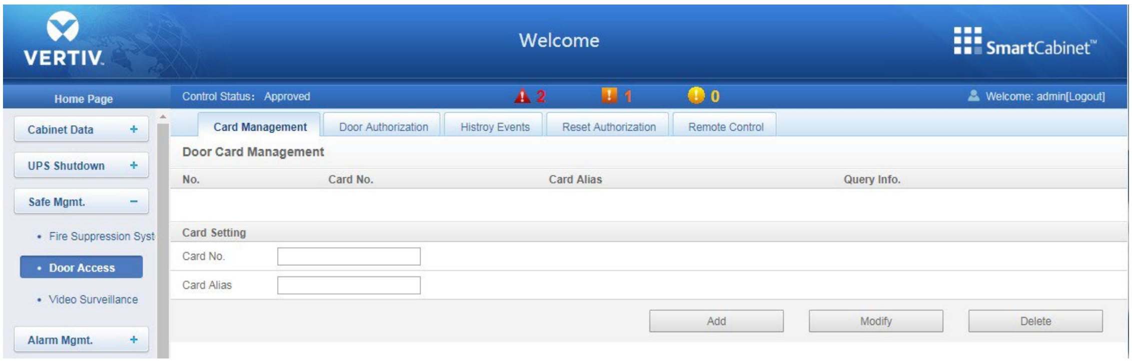
To delete a Server Shutdown task, Select the task to be deleted in the Server Shutdown task list and click the Delete button to complete the deletion of the task from the list.

3.4.7 Security Management

In the intelligent monitoring system home page, click the left security management menu, visible sub-menus: access control.

- Access Management

Click Access Management submenu under the Security menu to bring up the access card management page, as shown in Figure 3-43.

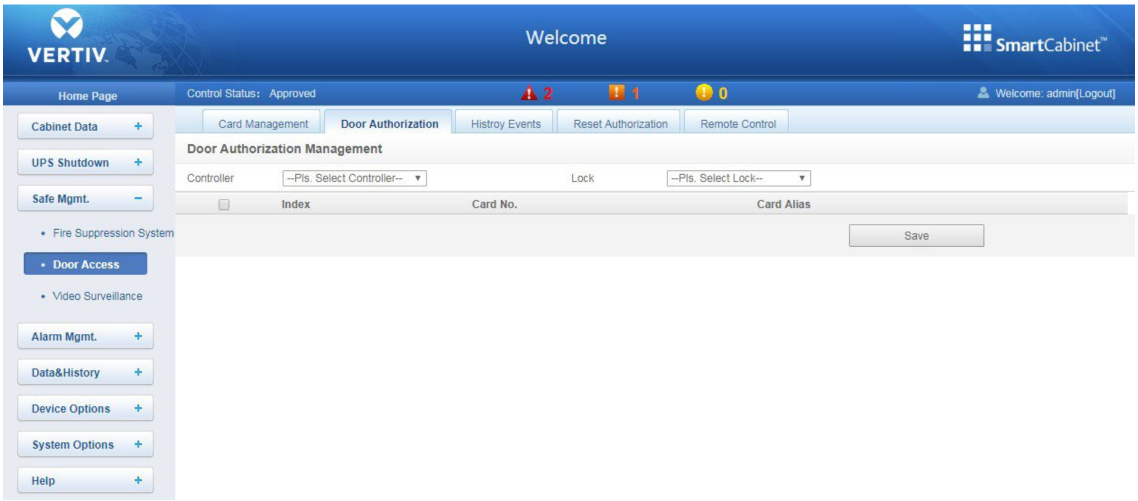

VERTIV
Welcome
SmartCabinet™
Home Page
2
1
0
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Fire Suppression Syst
Door Access
Video Surveillance
Alarm Mgmt. +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Card Management
No.
Card No.
Card Alias
Query Info.
Card Setting
Card No.
Card Alias
Add
Modify
Delete

Control Status： Approved

Welcome: admin[Logout]

Figure 3-43 Access Card Management

Click the Door Access function under the Safe Management menu. This leads to access to the access control card management screen as depicted in Figure 3-44.


VERTIV
Welcome
SmartCabinet™
Home Page
2
1
0
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Fire Suppression System
Door Access
Video Surveillance
Alarm Mgmt. +
Data&History +
Device Options +
System Options +
Help +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Authorization Management
Index
Card No.
Card Alias
Save

Control Status： Approved

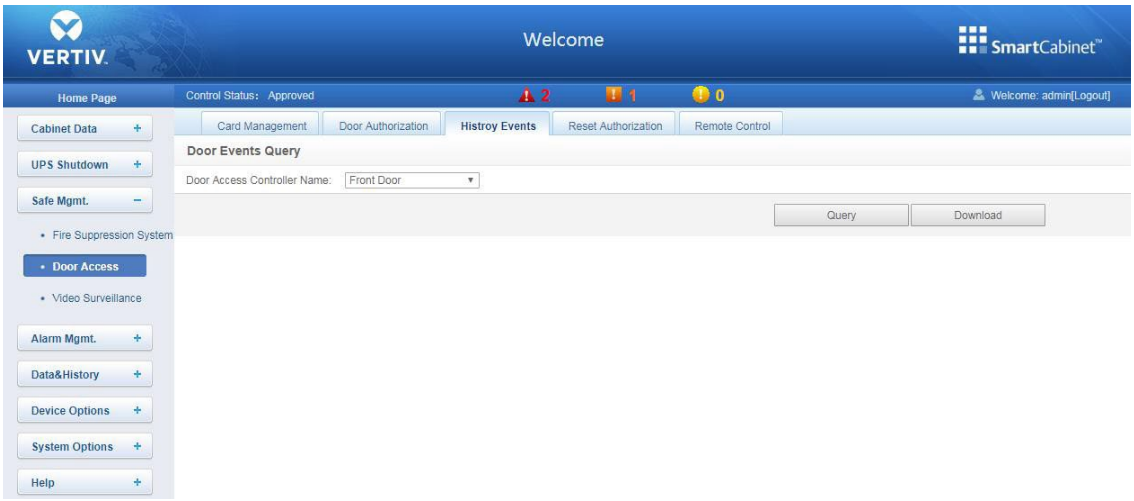
Welcome: admin[Logout]

Controller --Pls. Select Controller--

Lock --Pls. Select Lock--

Figure 3-44 Authority management

Click historical queries tab to enter the page history query, the query access control event recording, as shown in Figure 3-45.


VERTIV
Welcome
SmartCabinet™
Home Page
2
1
0
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Fire Suppression System
Door Access
Video Surveillance
Alarm Mgmt. +
Data&History +
Device Options +
System Options +
Help +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Door Events Query
Query
Download

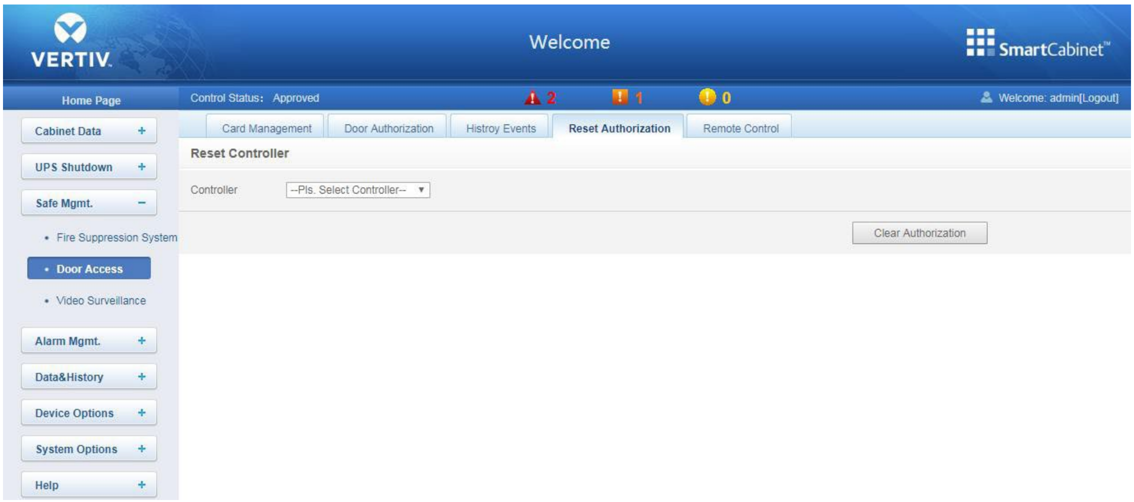
Control Status： Approved

Welcome: admin[Logout]

Door Access Controller Name: Front Door

Figure 3-45 Historical inquiry

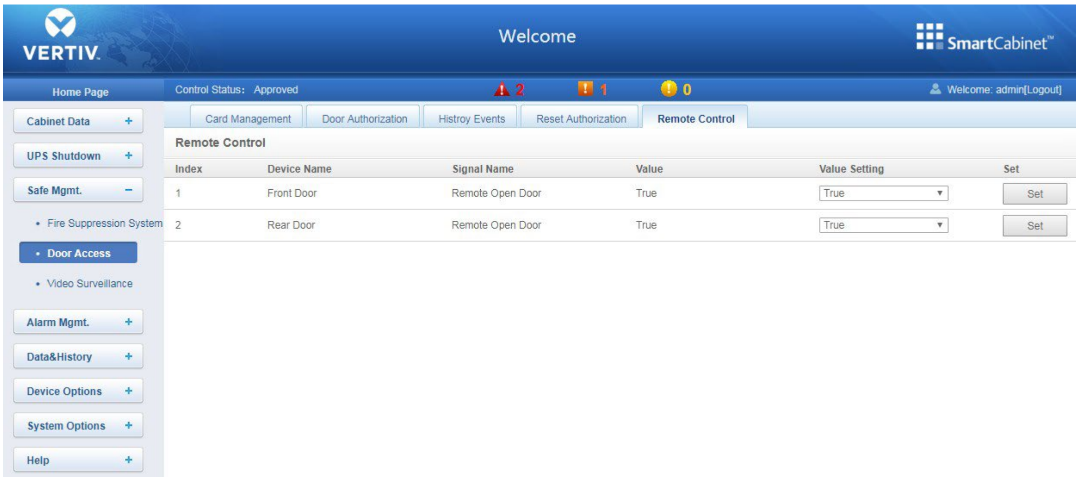
Click Reset Permissions tab to enter reset the permissions page, select the front and back door access controller device, shown in Figure 3-46.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Fire Suppression System
Door Access
Video Surveillance
Alarm Mgmt. +
Data&History +
Device Options +
System Options +
Help +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
Reset Controller
Clear Authorization

Controller: --Pls. Select Controller--

Figure 3-46 Reset permissions

Remote control click tab to enter the remote control page, before and after the door remote control switch, shown in Figure 3-47.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. −
Fire Suppression System
Door Access
Video Surveillance
Alarm Mgmt. +
Data&History +
Device Options +
System Options +
Help +
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control

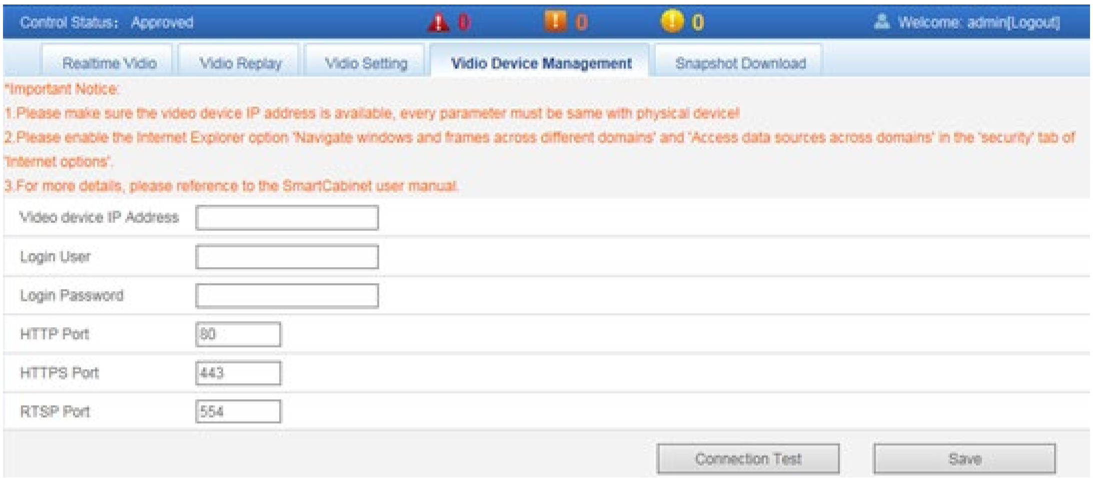
Remote Control

Index	Device Name	Signal Name	Value	Value Setting	Set
1	Front Door	Remote Open Door	True	True	Set
2	Rear Door	Remote Open Door	True	True	Set

Figure 3-47 Remote control

3.4.8 Video Management

Click the Video Management submenu under the Security Management menu and the page shown in Figure 3-48 will be displayed.



Control Status: Approved

0 0 0

*Important Notice:

1.Please make sure the video device IP address is available, every parameter must be same with physical device!

2.Please enable the Internet Explorer option 'Navigate windows and frames across different domains' and 'Access data sources across domains' in the 'security' tab of 'Internet options'.

3.For more details, please reference to the SmartCabinet user manual.

Video device IP Address	
Login User	
Login Password	
HTTP Port	80
HTTPS Port	443
RTSP Port	554

Figure 3-48 Video Device Management

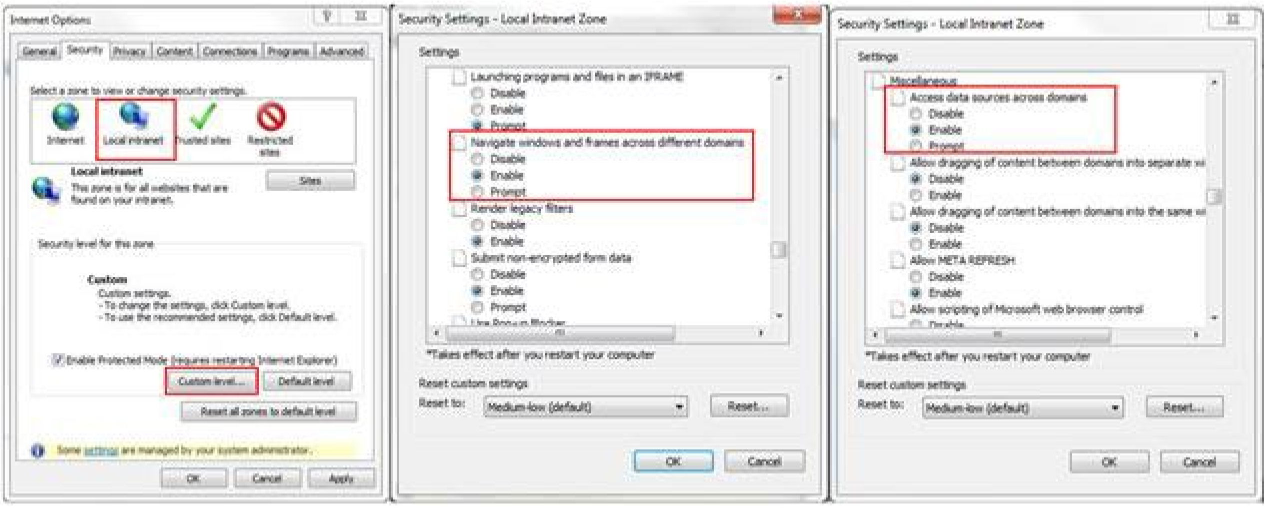
- Video Device Management

Enter the IP address of the video device, login username and password, http port, HTTPS port, RTSP port, click the Test Connection button, and test whether the video device is connected successfully.

If the interface pop-up prompt message "Video Device connection test successful!", indicating that the connection was successful or the connection failed, check that the video device information entered is correct and that the video device is connected correctly.

Click the Save button to save the input video device information

- *Make sure that the IP address of the input video device is available and that each parameter must be consistent with the actual device!*
- *Enable the cross-domain browse window and frame and access data sources through domains on the Security page in Internet Options in IE Explorer, as shown in Figure 3-49.*
- *Support for single-channel IPC (IP Camera) cameras.*
- *Upto 1 video support in IPC access.*
- *Video management only supports IE browser.*



Internet Options

General | Security | Privacy | Content | Connections | Programs | Advanced

Select a zone to view or change security settings.

Internet | Local intranet | Trusted sites | Restricted sites

Local intranet

This zone is for all websites that are found on your intranet.

Sites

Security level for this zone

Custom

Custom settings.
- To change the settings, click Custom level.
- To use the recommended settings, click Default level.

☑ Enable Protected Mode (requires restarting Internet Explorer)

Custom level... | Default level

Reset all zones to default level

Some settings are managed by your system administrator.

OK | Cancel | Apply

Security Settings - Local Intranet Zone

Settings

Launching programs and files in an IFRAME
○ Disable
○ Enable
● Prompt

Navigate windows and frames across different domains
○ Disable
● Enable
○ Prompt

Render legacy filters
○ Disable
● Enable

Submit non-encrypted form data
○ Disable
● Enable
○ Prompt

Use Pop-up Blocker

*Takes effect after you restart your computer

Reset custom settings

Reset to: Medium-low (default) | Reset...

OK | Cancel

Security Settings - Local Intranet Zone

Settings

Miscellaneous

Access data sources across domains
○ Disable
● Enable
○ Prompt

Allow dragging of content between domains into separate wi
● Disable
○ Enable

Allow dragging of content between domains into the same wi
● Disable
○ Enable

Allow META REFRESH
○ Disable
● Enable

Allow scripting of Microsoft web browser control
○ Disable

*Takes effect after you restart your computer

Reset custom settings

Reset to: Medium-low (default) | Reset...

OK | Cancel

Figure 3-49 Internet Settings

- Live Video

Clicking on the live video page sign under the Video Management menu will show the page shown in Figure 3-50, and table 3-1 is an icon description.

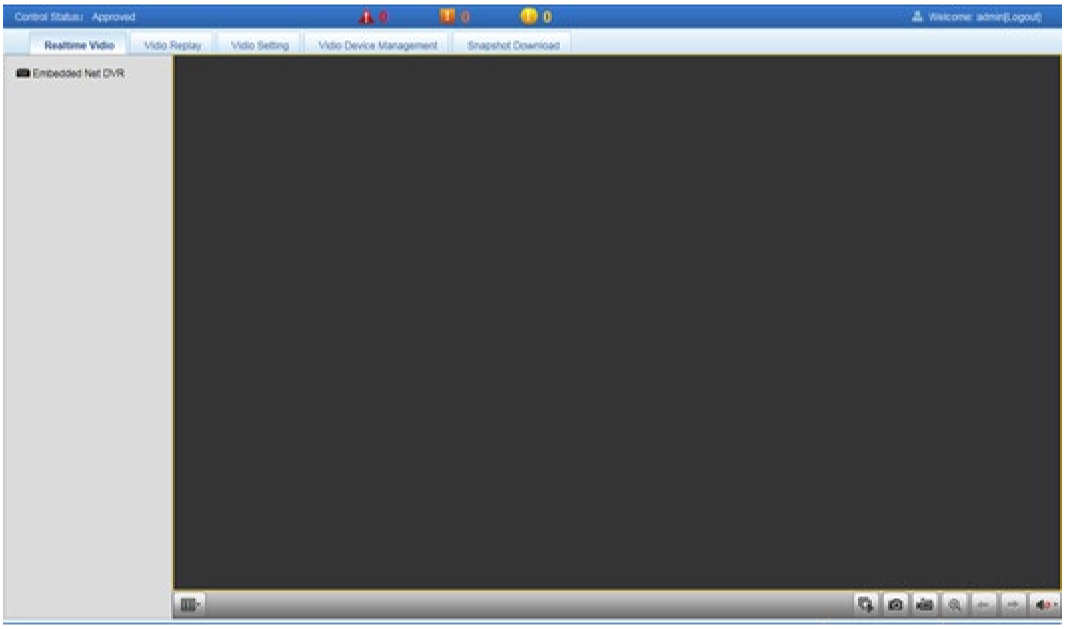


Figure 3-50 Live Video

Table 3-1 Real-time Video page icon description

Icon	Note
⧉	All Devices start/stop real-time browsing
📷	Capture Diagram
🎥	Video

Icon	Note
🔍	Zoom in on a video image in the selection area
← →	Switch to browse video surveillance for different devices as the current page browses in 1*1 mode
🔇	Set the Sound

- *After the capture and video operation, the file is saved under the save path of the parameter setting / Local configuration / Corresponding operation*

- Video Playback

Clicking on the Video Playback page tab under the Video Management menu will show the page shown in Figure 3-51, and Table 3-2 is the corresponding icon description.

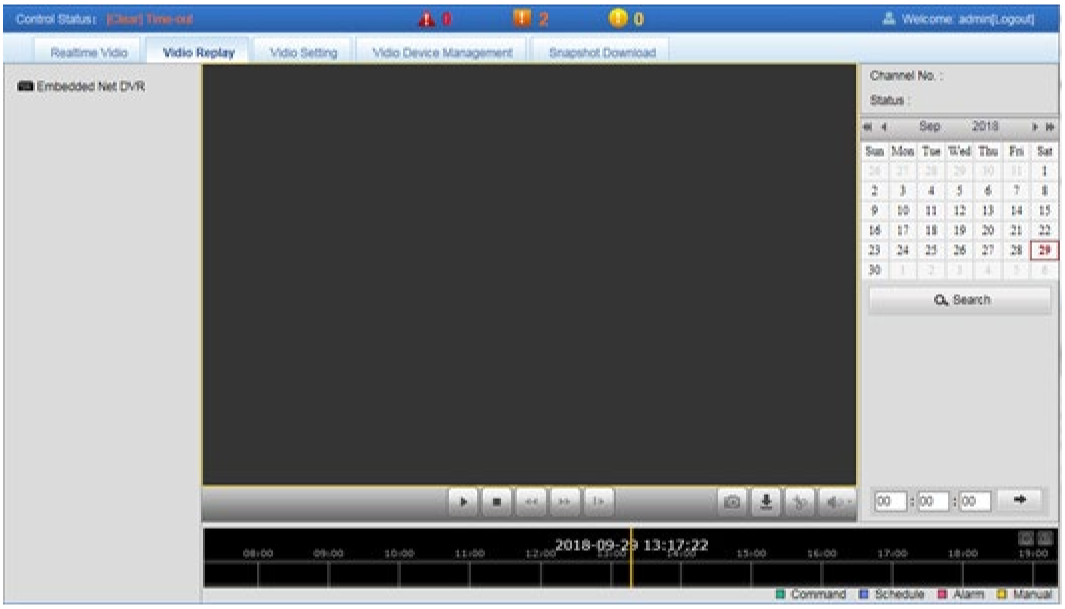

Control Status: [Clear] Time-out
0
2
0
Welcome: admin[Logout]
Realtime Vidio
Vidio Replay
Vidio Setting
Vidio Device Management
Snapshot Download
Embedded Net DVR
Channel No. :
Status :
Sep 2018
Sun Mon Tue Wed Thu Fri Sat
Search
2018-09-29 13:17:22
08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00
Command
Schedule
Alarm
Manual

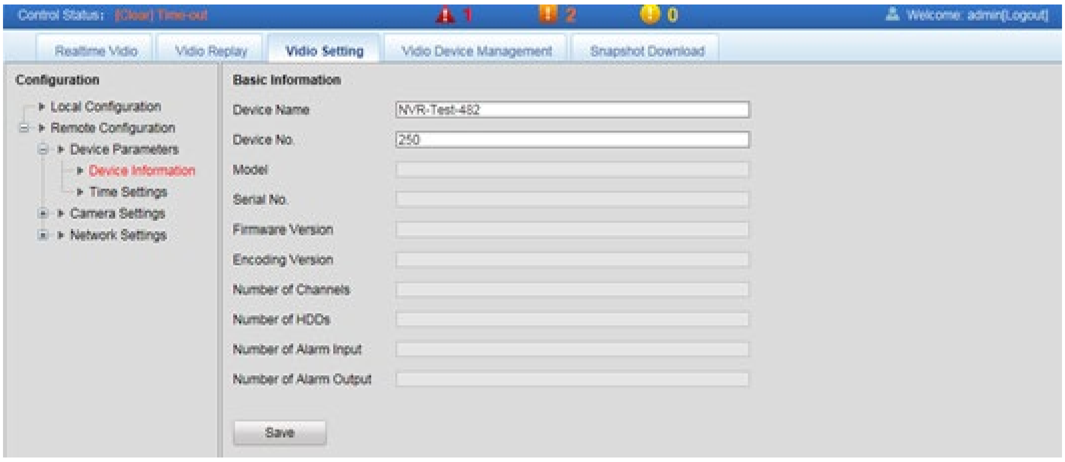
Figure 3-51 Video Playback

Table 3-2 Video Playback page icon description

Icon	Note
▶	Play
■	Stop
◀◀ ▶▶	Back/Fast Forward
I▶	Single Frame Playback
📷	Capture diagram
⤓	Download Playback video files
🔇	Set the Sound

- Parameter Setting

Click the Parameter Settings page tab under the Video Management menu and the page shown in Figure 3-52 will be displayed.


Control Status: [Clear] Time-out
1
2
0
Welcome: admin[Logout]
Realtime Vidio
Vidio Replay
Vidio Setting
Vidio Device Management
Snapshot Download
Configuration
Local Configuration
Remote Configuration
Device Parameters
Device Information
Time Settings
Camera Settings
Network Settings
Basic Information
Model
Serial No.
Firmware Version
Encoding Version
Number of Channels
Number of HDDs
Number of Alarm Input
Number of Alarm Output
Save

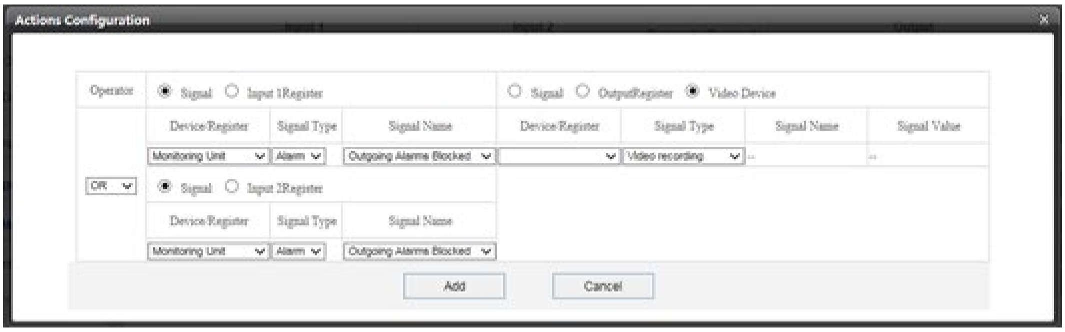
Device Name: NVR-Test-482
Device No.: 250

Figure 3-52 Parameter Setting

Parameter Settings page signings provide settings for various parameters of the camera, please refer to the "Operating manual" attached to the IPC camera for details of the parameters.

- Linkage Photo Download

Click on the Alarm Linkage submenu under the Alarm Management menu to add an alarm linkage configuration, as shown in Figure 3-53.


Actions Configuration
Operator
Device/Register
Signal Type
Signal Name
Signal Value
Add
Cancel

● Signal ○ Input 1Register
Device/Register: Monitoring Unit; Signal Type: Alarm; Signal Name: Outgoing Alarms Blocked
OR
● Signal ○ Input 2Register
Device/Register: Monitoring Unit; Signal Type: Alarm; Signal Name: Outgoing Alarms Blocked
○ Signal ○ OutputRegister ● Video Device
Signal Type: Video recording; Signal Name: --; Signal Value: --

Figure 3-53 Alarm Linkage Configuration

After the configured alarm conditions are triggered, the video device will be scratched or videotaped, the crawled image can only be viewed through the Web page click on the Video Management menu linkage photo Download, you can view, delete the picture. This is shown in Figure 3-54. Save up to 50 recent photos.

Crawled videos can be viewed through the video playback page under the Video Management menu.

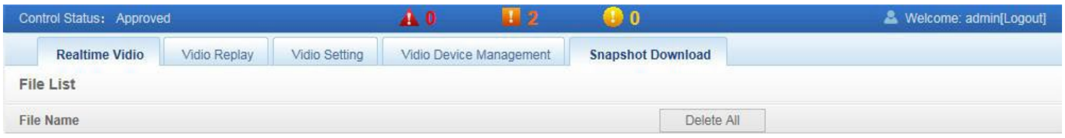

Control Status: Approved
0
2
0
Welcome: admin[Logout]
Realtime Vidio
Vidio Replay
Vidio Setting
Vidio Device Management
Snapshot Download
File List
File Name
Delete All

Figure 3-54 Linkage Photo Download

- *After video triggered by a linkage that appears as a yellow manual recording at playback/ Local configuration / Corresponding operation.*

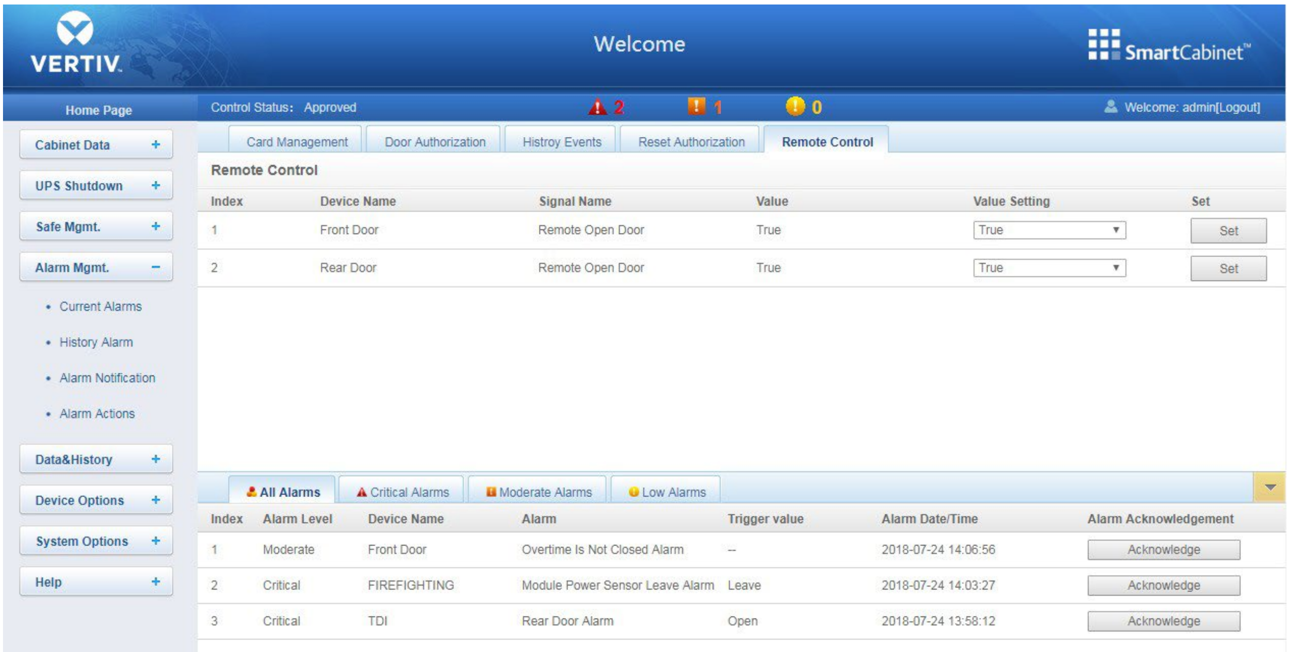
3.4.9 Alarm Management

Alarm Management provides centralized management for alarm function, allowing users to customize alarm notification and alarm linkage rules, and can be completed in this historical alarm query function.

Intelligent monitoring unit in the home page, click on the left menu alarm management, we can see four sub-menu, including: current and history alarms, alarm notification and alarm linkage configuration.

- Current alarms

Click the current alarm submenu alarm management menu, or set a reminder in accordance with a real-time alerts Real-time alarm alert settings, the alarm can eject the current display list, as shown in Figure 3-55.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data
UPS Shutdown
Safe Mgmt.
Alarm Mgmt.
Current Alarms
History Alarm
Alarm Notification
Alarm Actions
Data&History
Device Options
System Options
Help
Card Management
Door Authorization
Histroy Events
Reset Authorization
Remote Control
All Alarms
Critical Alarms
Moderate Alarms
Low Alarms

Remote Control

Index	Device Name	Signal Name	Value	Value Setting	Set
1	Front Door	Remote Open Door	True	True	Set
2	Rear Door	Remote Open Door	True	True	Set

Index	Alarm Level	Device Name	Alarm	Trigger value	Alarm Date/Time	Alarm Acknowledgement
1	Moderate	Front Door	Overtime Is Not Closed Alarm	--	2018-07-24 14:06:56	Acknowledge
2	Critical	FIREFIGHTING	Module Power Sensor Leave Alarm	Leave	2018-07-24 14:03:27	Acknowledge
3	Critical	TDI	Rear Door Alarm	Open	2018-07-24 13:58:12	Acknowledge

Figure 3-55 Current alarms

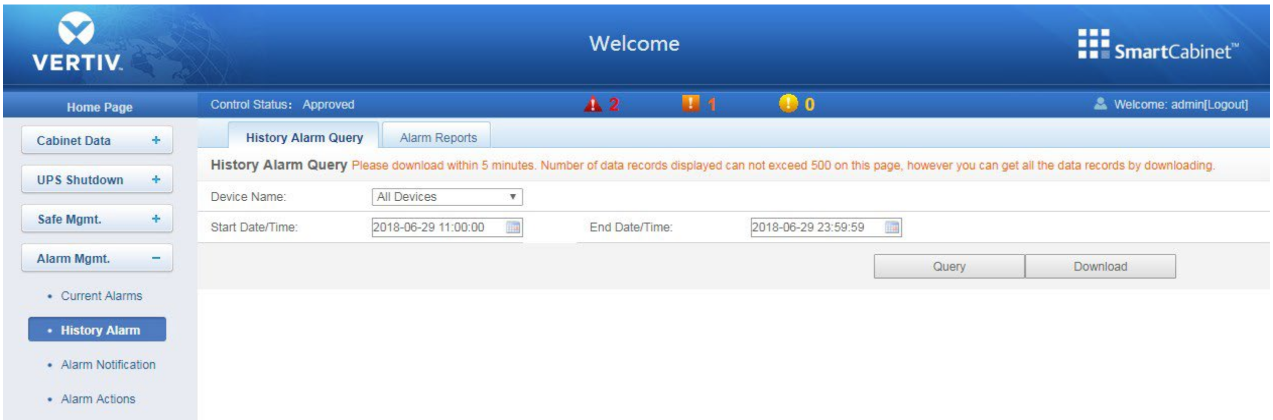
- Clicking on this option is the same as clicking on Real-time Alarm Pop out settings as covered in the section Figure 3-55 under the Home page of MSC card monitoring unit.
- The list will pop up on clicking and the current alarms can be viewed based on the Alarm Level such as Critical, Moderate, and Low Alarms. The All Alarms tab will show all the alarms.

- On the right hand side of the alarms, the Acknowledge button can be seen, which needs to be clicked to confirm the alarm. On confirming, the alarm will not participate in Alarm Linkage, and the alarm notification is sent only once.
- The Confirm link, visible after clicking on Acknowledge will show information pertaining to the alarm on hovering the mouse over it.

Historical alarm

Click historical alarm submenu under the Alarm Management menu to view historical records. Select a device (such as "all devices"), and set the start time (for example, "2018-06-29 11:00:00") and as of the time (for example, "2018-06-29 23:59:59"). Then click on the search button, the start time to list all the alarm records as of the time, including the information are: serial number, device name, signal name, alarm level, the trigger value, start time, confirmed that people, confirmed time and end time Figure 3-56.

Click the button to download the query results can also download the query results.



Control Status: Approved

History Alarm Query Please download within 5 minutes. Number of data records displayed can not exceed 500 on this page, however you can get all the data records by downloading.

Device Name: All Devices

Start Date/Time: 2018-06-29 11:00:00

End Date/Time: 2018-06-29 23:59:59

Figure 3-56 Historical alarm query

Alarm Notification Configuration

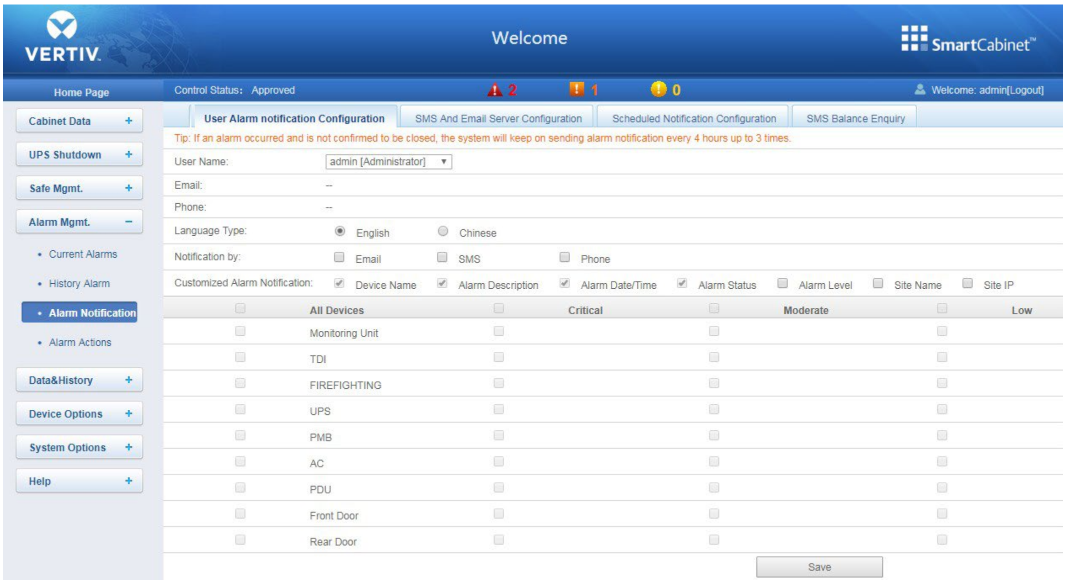
User Alarm Notification Configuration

Under the alarm notification configuration menu click on the alarm management sub-menus, pop-up page, as shown in Figure 3-57. The user can select the level notification method using the device which receives alarm notifications, alarm notification while the user can select the language type information, and custom alarm content (including the default device name, alarm description, an alarm time and alarm status).

Click the Save Configuration button to complete the alarm configuration. When the alarm is generated by the user will be notified of the notification arranged.

- *Users must tick the notification method first in the Notification by checkbox to select the notification method; only then can the alarm table be edited.*
- *In case, all the devices are selected, all devices will be configured with the same alarm level.*
- *If a low level alarm is chosen, the alarm level above this level will also be chosen.*

- *If some specific device is selected, the highest level Critical Alarm is chosen as the default.*


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. −
Current Alarms
History Alarm
Alarm Notification
Alarm Actions
Data&History +
Device Options +
System Options +
Help +
User Alarm notification Configuration
SMS And Email Server Configuration
Scheduled Notification Configuration
SMS Balance Enquiry
Save

Tip: If an alarm occurred and is not confirmed to be closed, the system will keep on sending alarm notification every 4 hours up to 3 times.

User Name: admin [Administrator]

Email: --

Phone: --

Language Type: ● English ○ Chinese

Notification by: ☐ Email ☐ SMS ☐ Phone

Customized Alarm Notification: ☑ Device Name ☑ Alarm Description ☑ Alarm Date/Time ☑ Alarm Status ☐ Alarm Level ☐ Site Name ☐ Site IP

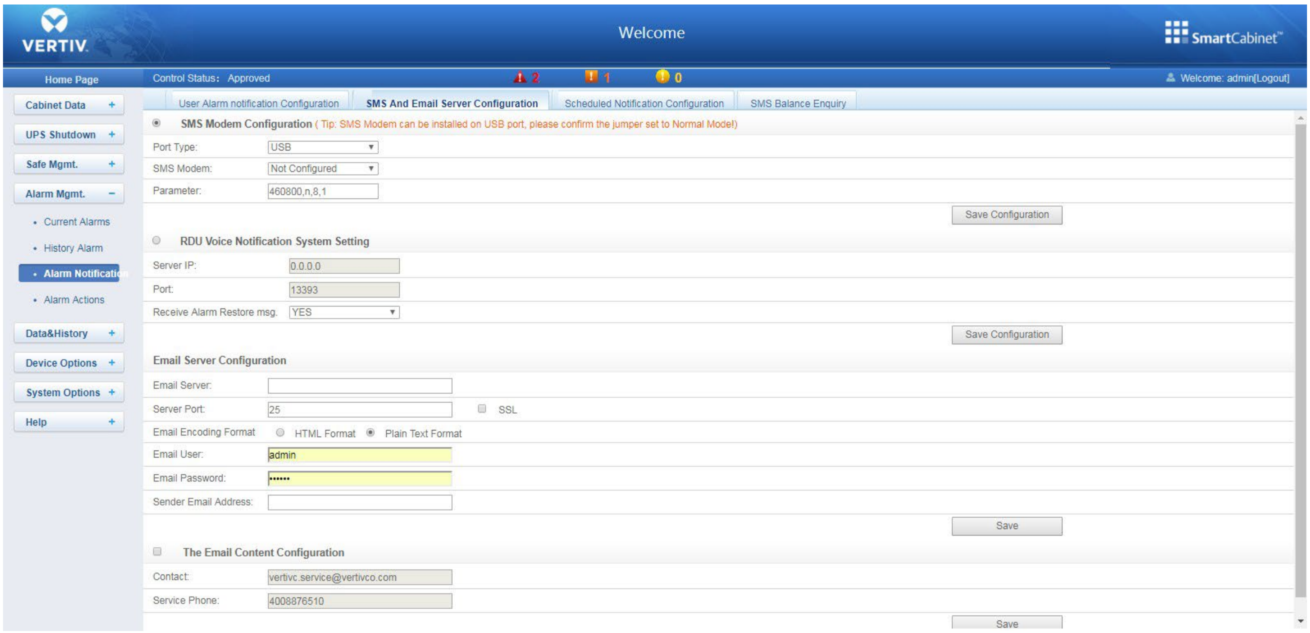
☐	All Devices	☐	Critical	☐	Moderate	☐	Low
☐	Monitoring Unit	☐		☐		☐	
☐	TDI	☐		☐		☐	
☐	FIREFIGHTING	☐		☐		☐	
☐	UPS	☐		☐		☐	
☐	PMB	☐		☐		☐	
☐	AC	☐		☐		☐	
☐	PDU	☐		☐		☐	
☐	Front Door	☐		☐		☐	
☐	Rear Door	☐		☐		☐	

Figure 3-57 User Alarm Notification Configuration

SMS and Email Server Configuration

Click alarms in alarm management menu notification configuration sub-menu, then click on the SMS module and the mail server configuration buttons, pop-up page shown in

Figure 3-58.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. −
Current Alarms
History Alarm
Alarm Notificati
Alarm Actions
Data&History +
Device Options +
System Options +
Help +
User Alarm notification Configuration
SMS And Email Server Configuration
Scheduled Notification Configuration
SMS Balance Enquiry
Save Configuration
Save Configuration
Save
Save

● **SMS Modem Configuration** (Tip: SMS Modem can be installed on USB port, please confirm the jumper set to Normal Mode!)

Port Type: USB

SMS Modem: Not Configured

Parameter: 460800,n,8,1

○ **RDU Voice Notification System Setting**

Server IP: 0.0.0.0

Port: 13393

Receive Alarm Restore msg. YES

Email Server Configuration

Email Server:

Server Port: 25 ☐ SSL

Email Encoding Format ○ HTML Format ● Plain Text Format

Email User: admin

Email Password: ••••••

Sender Email Address:

☐ **The Email Content Configuration**

Contact: vertivc.service@vertivco.com

Service Phone: 4008876510

Figure 3-58 SMS module and the mail server configuration

In the page shown in Figure 3-58, the user may configure the notification message language module or multimedia messaging system or telephone alarm notification alert, the mail server can also be configured to alert the system to alarm notification by email, configured following steps:

SMS module configuration settings

1) via a USB port access message MODEM, and then select the port type in accordance with the communication parameters will automatically display the page;

2) Select the type of SMS message access MODEM module according to the model;

3) set the communication parameters of the SMS MODEM;

4) Click the Save Configuration button to save the current user's SMS module configuration.

RDU multimedia voice notification system settings

1) The user needs to install the package until RDU multimedia announcement RDU configuration;

2) Enter the server at the IP address of IP server

3) The input port number in the port number, the default is 13393;

4) Click the Save Configuration button to save the multimedia voice notification system configuration.

Mail server configuration

1) Enter the IP address or domain name server in the mail server;

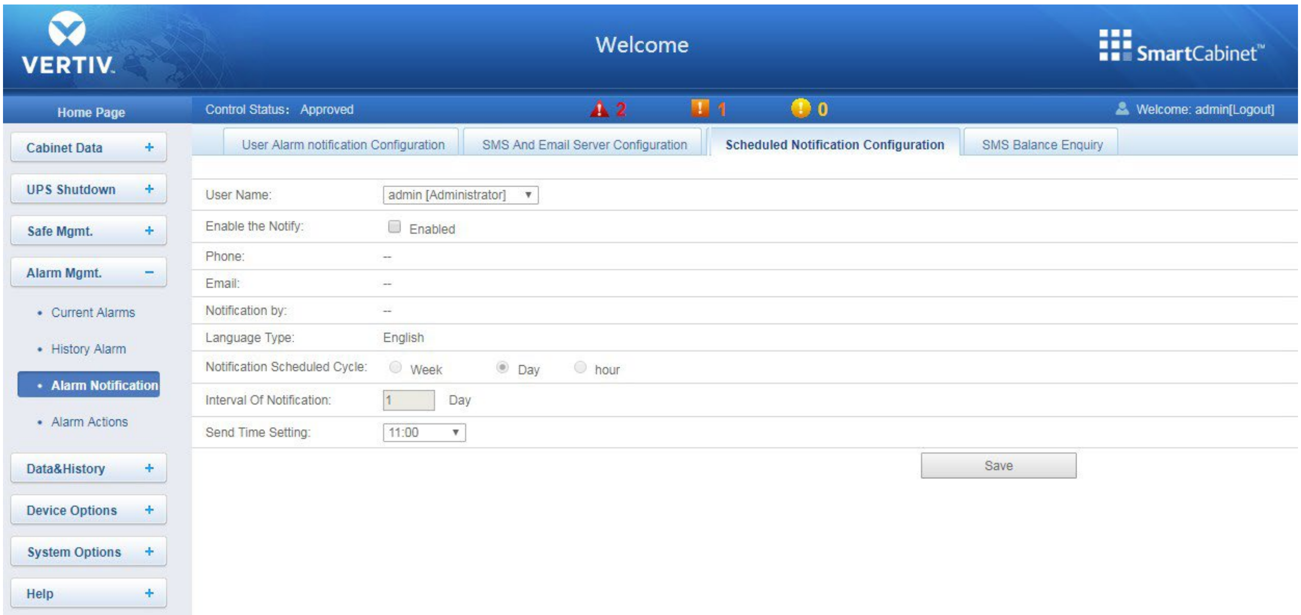
2) In the corresponding input port number field, e-mail user name, password, and e-mail address outbox;

3) Click the Save Configuration button to save the current user's mail server configuration.

- *The Server Port is 25 by default. When SSL is chosen, the Server Port becomes 465 automatically. The Email User is RDU-A by default. When using SSL, ensure that the Email server supports the SSL function*.

State timing notification system configuration

Click the alarm notification configuration menu alarm management sub-menu, then click on the system configuration status notification button to pop up page shown in Figure 3-59.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. −
Current Alarms
History Alarm
Alarm Notification
Alarm Actions
Data&History +
Device Options +
System Options +
Help +
User Alarm notification Configuration
SMS And Email Server Configuration
Scheduled Notification Configuration
SMS Balance Enquiry
Save

User Name: admin [Administrator]

Enable the Notify: ☐ Enabled

Phone: --

Email: --

Notification by: --

Language Type: English

Notification Scheduled Cycle: ○ Week ● Day ○ hour

Interval Of Notification: 1 Day

Send Time Setting: 11:00

Figure 3-59 State timing notification system configuration

- *Scheduled Notification Configuration must be used in conjunction with the Alarm notification configuration; else the User Name, Notification by, and Language Type cannot be selected.*
- *The Phone notification method is not supported by the Scheduled Notification Configuration.*
- *Scheduled Notification involves sending the running state of the MSC card system (either normal or alarm) to the users.*

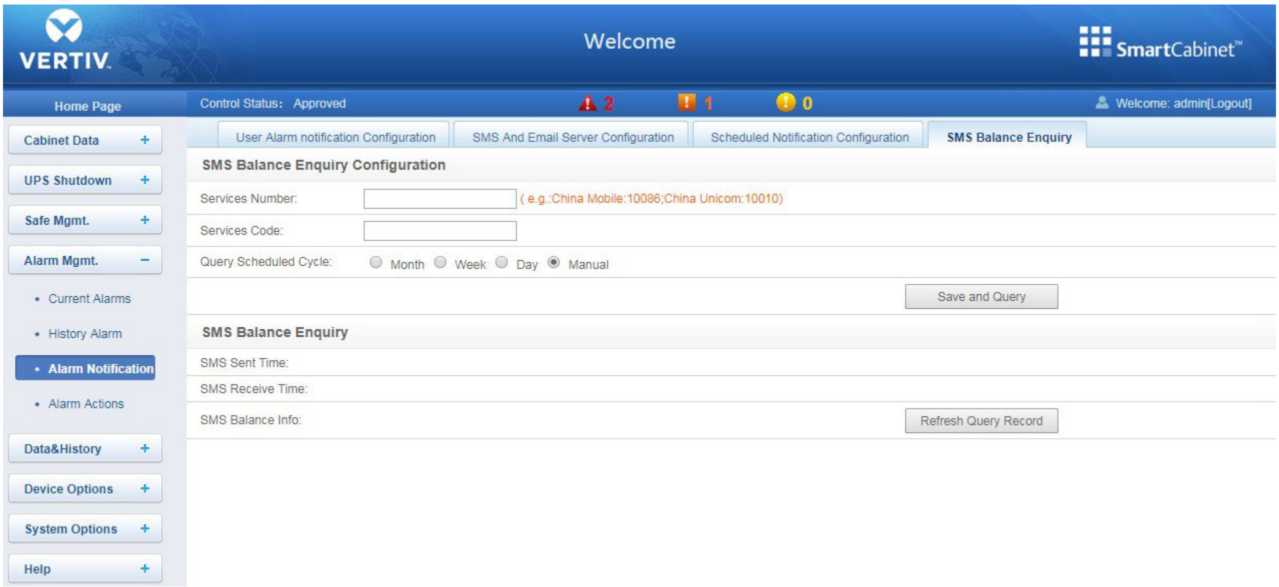
1) In the user scheduled alarm notification configuration page is completed and the user holds the transmission, and setting the transmission mode notification language;

2) Timing notification configuration page system status are sequentially set transmission period setting (setting range: 8: 00-20: 00), transmission cycle mode (default: Hour), the transmission interval setting (default: 1) and the transmission time setting (default :Starting time).

3) Click the Save button to save the system status notification configuration.

SMS balance inquiry

Alarm Notification Configuration sub-menu under the Alarm Management menu click, and then click SMS balance inquiry button to bring up the page shown in Figure 3-60.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. −
Current Alarms
History Alarm
Alarm Notification
Alarm Actions
Data&History +
Device Options +
System Options +
Help +
User Alarm notification Configuration
SMS And Email Server Configuration
Scheduled Notification Configuration
SMS Balance Enquiry
Save and Query
Refresh Query Record

SMS Balance Enquiry Configuration

Services Number: (e.g.:China Mobile:10086;China Unicom:10010)

Services Code:

Query Scheduled Cycle: ○ Month ○ Week ○ Day ● Manual

SMS Balance Enquiry

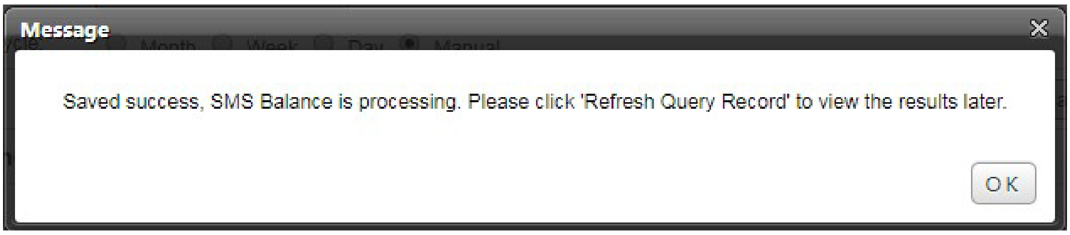
SMS Sent Time:

SMS Receive Time:

SMS Balance Info:

Figure 3-60 SMS balance inquiry

1) According to the operator actually used to fill carrier number and business code, select query cycle, click Save and inquiries; following dialog box appears, as shown in Figure 3-61.



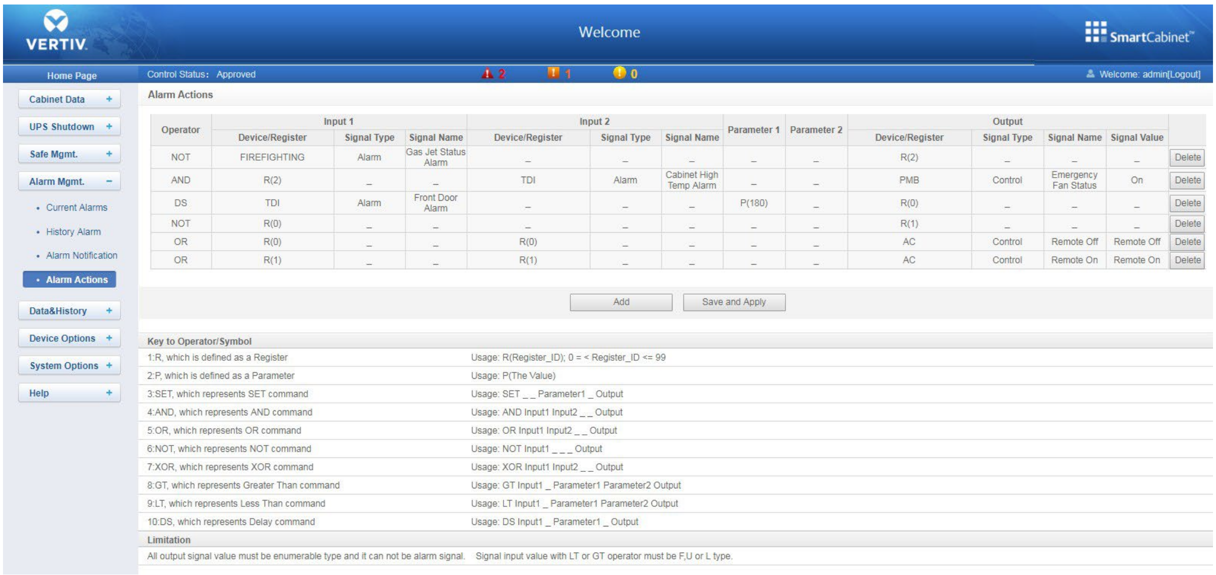
Saved success, SMS Balance is processing. Please click 'Refresh Query Record' to view the results later.

Figure 3-61 Saved successfully

2) Click to refresh the query later records, view the results.

- Alarm linkage

Click alarm linkage submenu under the Alarm Management menu for the alarm linkage function, the pop-up page shown in Figure 3-62.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. −
Current Alarms
History Alarm
Alarm Notification
Alarm Actions
Data&History +
Device Options +
System Options +
Help +
Add
Save and Apply

Alarm Actions

Operator	Input 1			Input 2			Parameter 1	Parameter 2	Output				
	Device/Register	Signal Type	Signal Name	Device/Register	Signal Type	Signal Name			Device/Register	Signal Type	Signal Name	Signal Value	
NOT	FIREFIGHTING	Alarm	Gas Jet Status Alarm	_	_	_	_	_	R(2)	_	_	_	Delete
AND	R(2)	_	_	TDI	Alarm	Cabinet High Temp Alarm	_	_	PMB	Control	Emergency Fan Status	On	Delete
DS	TDI	Alarm	Front Door Alarm	_	_	_	P(180)	_	R(0)	_	_	_	Delete
NOT	R(0)	_	_	_	_	_	_	_	R(1)	_	_	_	Delete
OR	R(0)	_	_	R(0)	_	_	_	_	AC	Control	Remote Off	Remote Off	Delete
OR	R(1)	_	_	R(1)	_	_	_	_	AC	Control	Remote On	Remote On	Delete

Key to Operator/Symbol

1:R, which is defined as a Register	Usage: R(Register_ID); 0 = < Register_ID <= 99
2:P, which is defined as a Parameter	Usage: P(The Value)
3:SET, which represents SET command	Usage: SET _ _ Parameter1 _ Output
4:AND, which represents AND command	Usage: AND Input1 Input2 _ _ Output
5:OR, which represents OR command	Usage: OR Input1 Input2 _ _ Output
6:NOT, which represents NOT command	Usage: NOT Input1 _ _ _ Output
7:XOR, which represents XOR command	Usage: XOR Input1 Input2 _ _ Output
8:GT, which represents Greater Than command	Usage: GT Input1 _ Parameter1 Parameter2 Output
9:LT, which represents Less Than command	Usage: LT Input1 _ Parameter1 Parameter2 Output
10:DS, which represents Delay command	Usage: DS Input1 _ Parameter1 _ Output

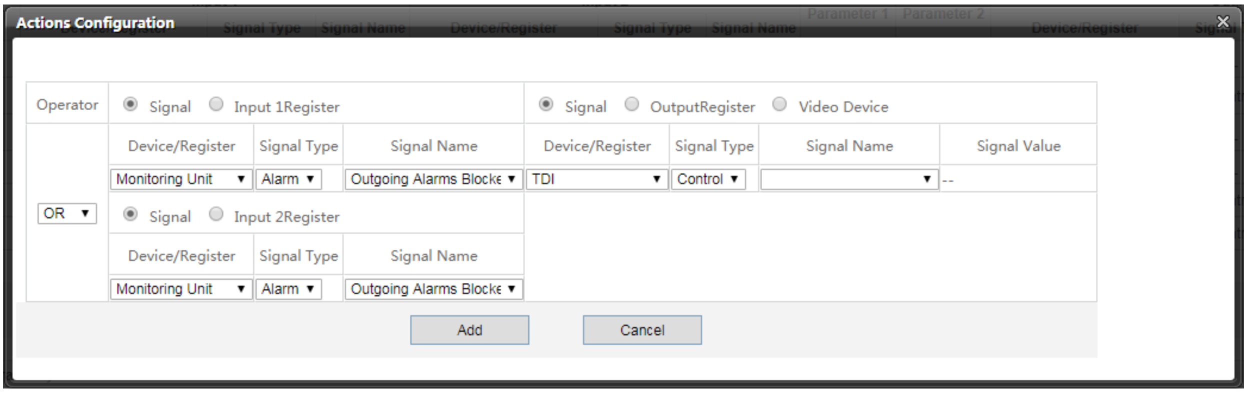
Limitation

All output signal value must be enumerable type and it can not be alarm signal. Signal input value with LT or GT operator must be F,U or L type.

Figure 3-62 Alarm linkage configuration 1

Linkage function

Figure 3-62 Symbol Meaning list shows all commands and their uses. Click the Add button to add a new alarm linkage expressions, or click the Cancel button, as shown in Figure 3-63



Operator: OR

● Signal ○ Input 1Register

Device/Register: Monitoring Unit ▾ | Signal Type: Alarm ▾ | Signal Name: Outgoing Alarms Blocke ▾

● Signal ○ Input 2Register

Device/Register: Monitoring Unit ▾ | Signal Type: Alarm ▾ | Signal Name: Outgoing Alarms Blocke ▾

● Signal ○ OutputRegister ○ Video Device

Device/Register: TDI ▾ | Signal Type: Control ▾ | Signal Name: ▾ | Signal Value: --

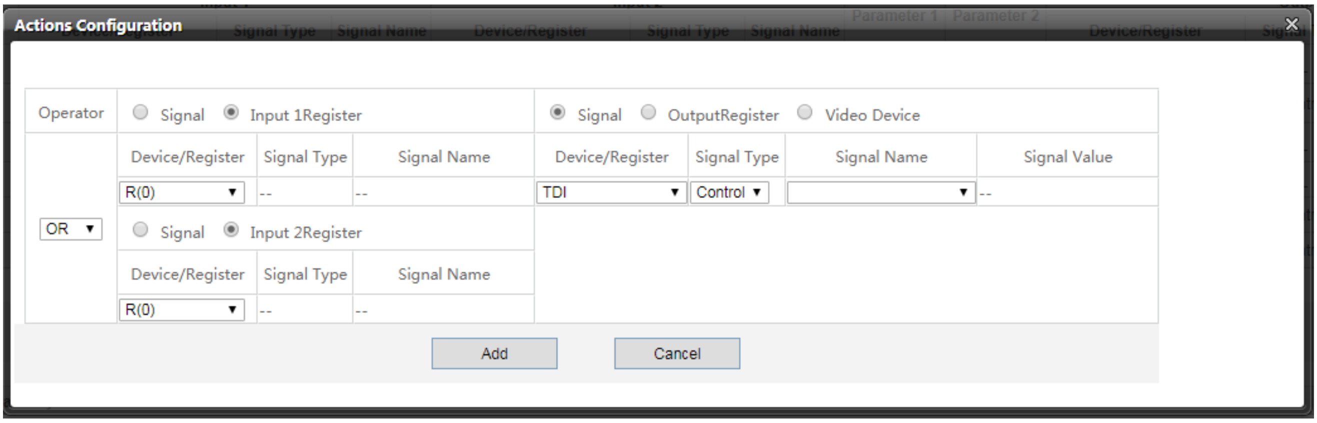
Figure 3-63 Alarm linkage configuration 2

First, select an operator, e.g., "OR", the expression is "1 signals [Input register 1] or 2 signals [Input register 2] = 3 signal [output register]."

Secondly, when the expression of an input or output parameter selection signal, the device name should be selected in the device name drop-down list, and select the type of signal in the signal type drop-down list, and finally select signal name of the signal name drop-down list, 1,2,3 signal may be any signal intelligent monitoring system available.

Finally, when the expression of selected parameter registers need to select the corresponding register names, such as R (0), R (1), etc., shown in Figure 3-64.

If you click the Add button is shown in Figure 3-65, alarm linkage expressions have been added, click the Save button to confirm the changes to take effect. Click the Delete button to delete alarm linkage expressions, and click the Save button to confirm the changes to take effect.



Operator: OR

○ Signal ● Input 1Register

Device/Register: R(0) ▾ | Signal Type: -- | Signal Name: --

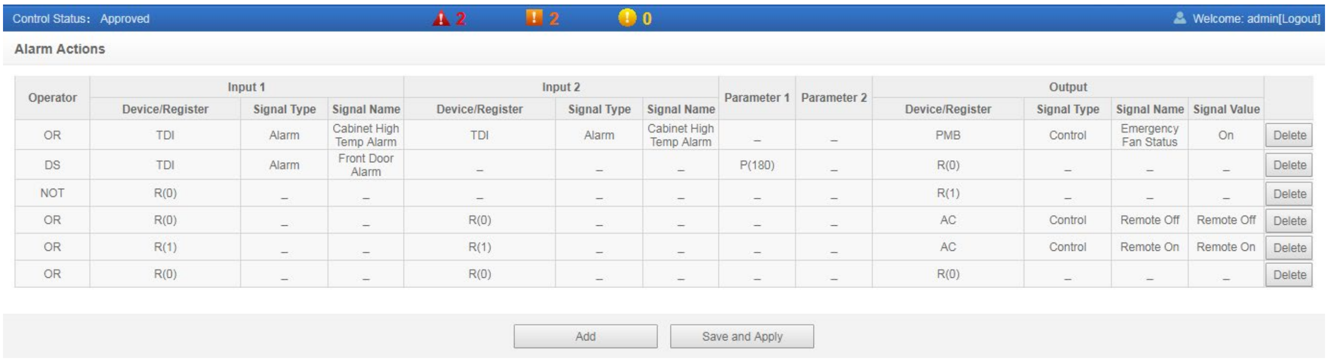
○ Signal ● Input 2Register

Device/Register: R(0) ▾ | Signal Type: -- | Signal Name: --

● Signal ○ OutputRegister ○ Video Device

Device/Register: TDI ▾ | Signal Type: Control ▾ | Signal Name: ▾ | Signal Value: --

Figure 3-64 Alarm linkage configuration 2


Control Status: Approved
2
2
0
Welcome: admin[Logout]

Alarm Actions

Operator	Input 1			Input 2			Parameter 1	Parameter 2	Output				
	Device/Register	Signal Type	Signal Name	Device/Register	Signal Type	Signal Name			Device/Register	Signal Type	Signal Name	Signal Value	
OR	TDI	Alarm	Cabinet High Temp Alarm	TDI	Alarm	Cabinet High Temp Alarm	_	_	PMB	Control	Emergency Fan Status	On	Delete
DS	TDI	Alarm	Front Door Alarm	_	_	_	P(180)	_	R(0)	_	_	_	Delete
NOT	R(0)	_	_	_	_	_	_	_	R(1)	_	_	_	Delete
OR	R(0)	_	_	R(0)	_	_	_	_	AC	Control	Remote Off	Remote Off	Delete
OR	R(1)	_	_	R(1)	_	_	_	_	AC	Control	Remote On	Remote On	Delete
OR	R(0)	_	_	R(0)	_	_	_	_	R(0)	_	_	_	Delete

Add
Save and Apply

Figure 3-65 Alarm linkage configuration 3

3.4.10 Data Management

Data management to provide users with various types of historical data and log query service.

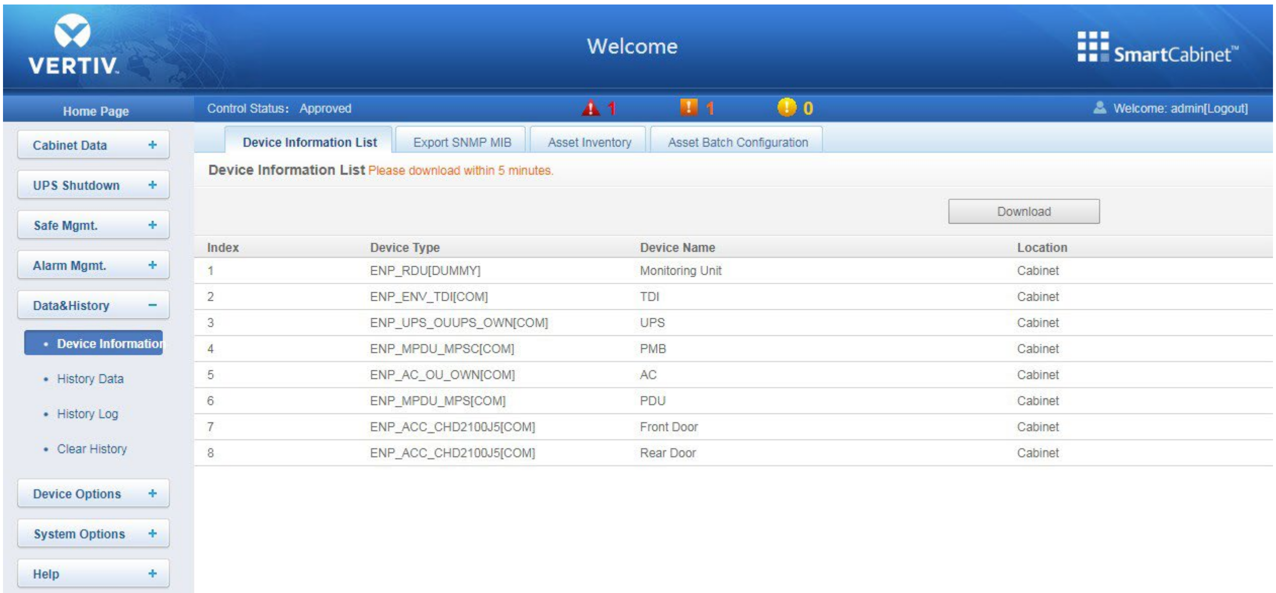
In the intelligent monitoring system home page, click on the left menu of data management, we can see three sub-menu, including: device data, historical data and log data.

- Device Data

  Click Device Data submenu under the Data Management menu, pop-up page shown in Figure 3-66, which contains a list of device information, SNMP MIB to export asset information assets and batch configuration of four sub-pages.

  1. Device List

  It lists the page shown in Figure 3-66 of the main information for all devices, click on the download button to download device information query results.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
• Device Information
• History Data
• History Log
• Clear History
Device Options +
System Options +
Help +
Device Information List
Export SNMP MIB
Asset Inventory
Asset Batch Configuration
Download

Device Information List Please download within 5 minutes.

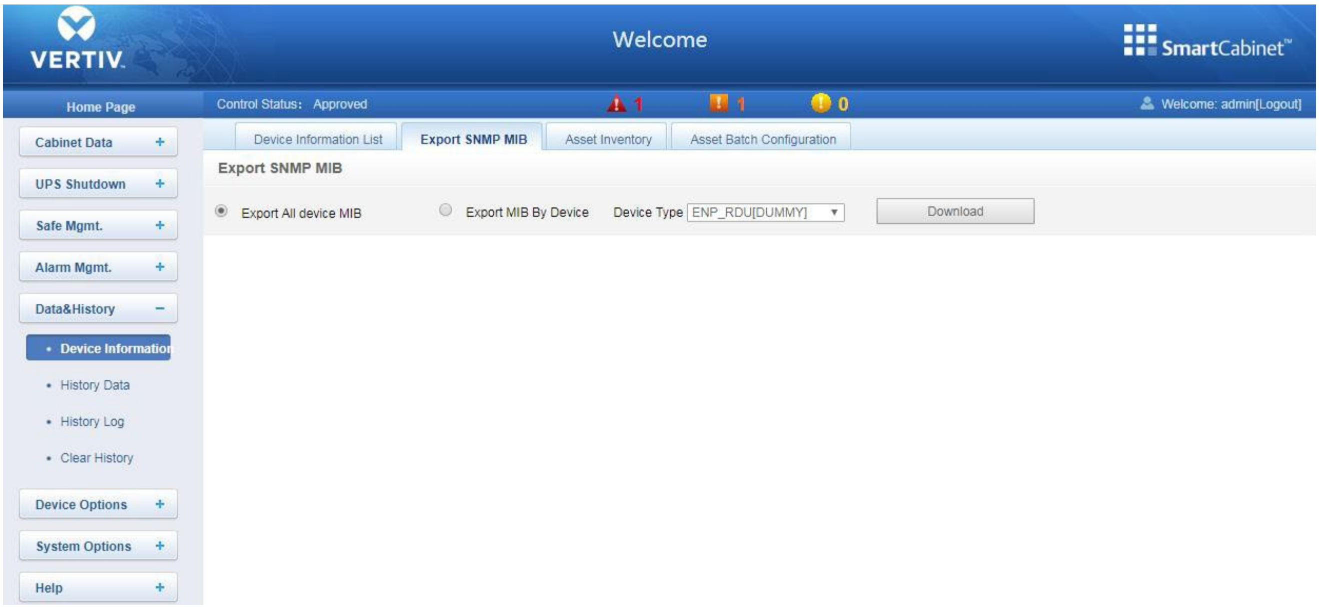
Index	Device Type	Device Name	Location
1	ENP_RDU[DUMMY]	Monitoring Unit	Cabinet
2	ENP_ENV_TDI[COM]	TDI	Cabinet
3	ENP_UPS_OUUPS_OWN[COM]	UPS	Cabinet
4	ENP_MPDU_MPSC[COM]	PMB	Cabinet
5	ENP_AC_OU_OWN[COM]	AC	Cabinet
6	ENP_MPDU_MPS[COM]	PDU	Cabinet
7	ENP_ACC_CHD2100J5[COM]	Front Door	Cabinet
8	ENP_ACC_CHD2100J5[COM]	Rear Door	Cabinet

Figure 3-66 Device Data

Export SNMP MIB

This option is used to export all the MIB Information. Either the MIB of all the devices can be exported at a given point of time or it can be exported depending on the device. Either ways, select the device type and click on the Download button to obtain the relevant information.

Figure 3-67 shows an illustration of exporting the MIB information:


VERTIV
Welcome
SmartCabinet™
Home Page
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Information
History Data
History Log
Clear History
Device Options +
System Options +
Help +
1
1
0
Welcome: admin[Logout]
Device Information List
Export SNMP MIB
Asset Inventory
Asset Batch Configuration
Download

Control Status: Approved

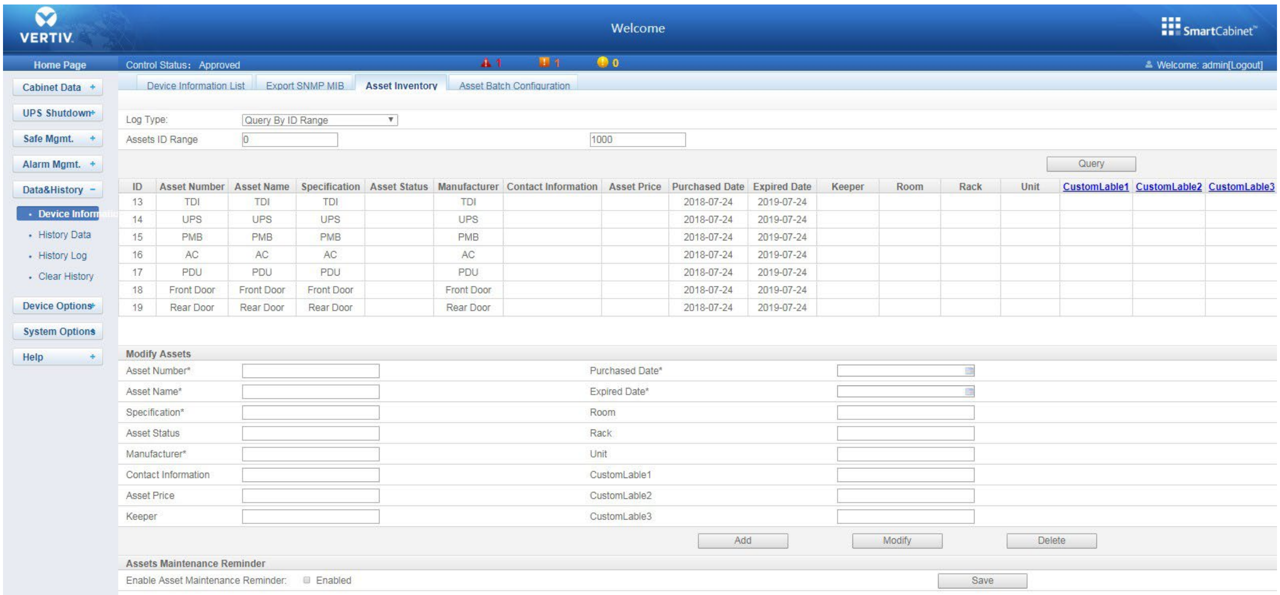
Export SNMP MIB

● Export All device MIB ○ Export MIB By Device Device Type ENP_RDU[DUMMY]

Figure 3-67 SNMP MIB information derived

Asset Information

Shown in Figure 3-68, the asset information based on the asset name, code, scope ID, date of warranty.


VERTIV
Welcome
SmartCabinet™
Home Page
Cabinet Data +
UPS Shutdown+
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Inform
History Data
History Log
Clear History
Device Options+
System Options
Help +
1
1
0
Welcome: admin[Logout]
Device Information List
Export SNMP MIB
Asset Inventory
Asset Batch Configuration
Query
Add
Modify
Delete
Save

Control Status: Approved

Log Type: Query By ID Range

Assets ID Range 0 1000

ID	Asset Number	Asset Name	Specification	Asset Status	Manufacturer	Contact Information	Asset Price	Purchased Date	Expired Date	Keeper	Room	Rack	Unit	CustomLable1	CustomLable2	CustomLable3
13	TDI	TDI	TDI		TDI			2018-07-24	2019-07-24							
14	UPS	UPS	UPS		UPS			2018-07-24	2019-07-24							
15	PMB	PMB	PMB		PMB			2018-07-24	2019-07-24							
16	AC	AC	AC		AC			2018-07-24	2019-07-24							
17	PDU	PDU	PDU		PDU			2018-07-24	2019-07-24							
18	Front Door	Front Door	Front Door		Front Door			2018-07-24	2019-07-24							
19	Rear Door	Rear Door	Rear Door		Rear Door			2018-07-24	2019-07-24							

Modify Assets

Asset Number*		Purchased Date*	
Asset Name*		Expired Date*	
Specification*		Room	
Asset Status		Rack	
Manufacturer*		Unit	
Contact Information		CustomLable1	
Asset Price		CustomLable2	
Keeper		CustomLable3	

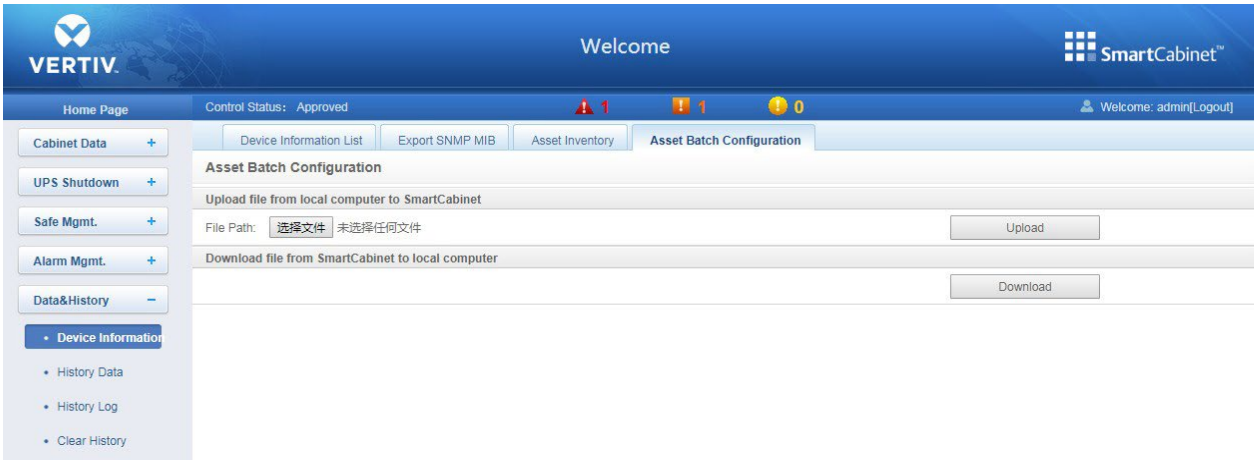
Assets Maintenance Reminder

Enable Asset Maintenance Reminder: ☐ Enabled

Figure 3-68 Asset Information

Asset batch configuration

As shown in Figure 3-69 upload and download asset allocation.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Informatio
History Data
History Log
Clear History
Device Information List
Export SNMP MIB
Asset Inventory
Asset Batch Configuration
Upload
Download

Asset Batch Configuration

Upload file from local computer to SmartCabinet

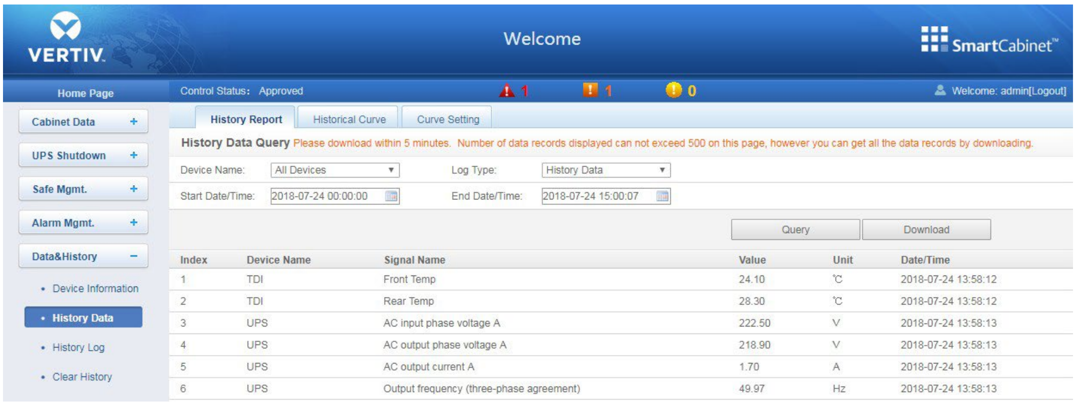
File Path: 选择文件 未选择任何文件

Download file from SmartCabinet to local computer

Figure 3-69 Asset batch configuration

- Historical data

Click historical data submenu under the Data Management menu, pop-up page shown in Figure 3-70, there are historical data, reports curve and the curve report set three sub-menus.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Information
History Data
History Log
Clear History
History Report
Historical Curve
Curve Setting
Query
Download

History Data Query Please download within 5 minutes. Number of data records displayed can not exceed 500 on this page, however you can get all the data records by downloading.

Device Name: All Devices

Log Type: History Data

Start Date/Time: 2018-07-24 00:00:00

End Date/Time: 2018-07-24 15:00:07

Index	Device Name	Signal Name	Value	Unit	Date/Time
1	TDI	Front Temp	24.10	℃	2018-07-24 13:58:12
2	TDI	Rear Temp	28.30	℃	2018-07-24 13:58:12
3	UPS	AC input phase voltage A	222.50	V	2018-07-24 13:58:13
4	UPS	AC output phase voltage A	218.90	V	2018-07-24 13:58:13
5	UPS	AC output current A	1.70	A	2018-07-24 13:58:13
6	UPS	Output frequency (three-phase agreement)	49.97	Hz	2018-07-24 13:58:13

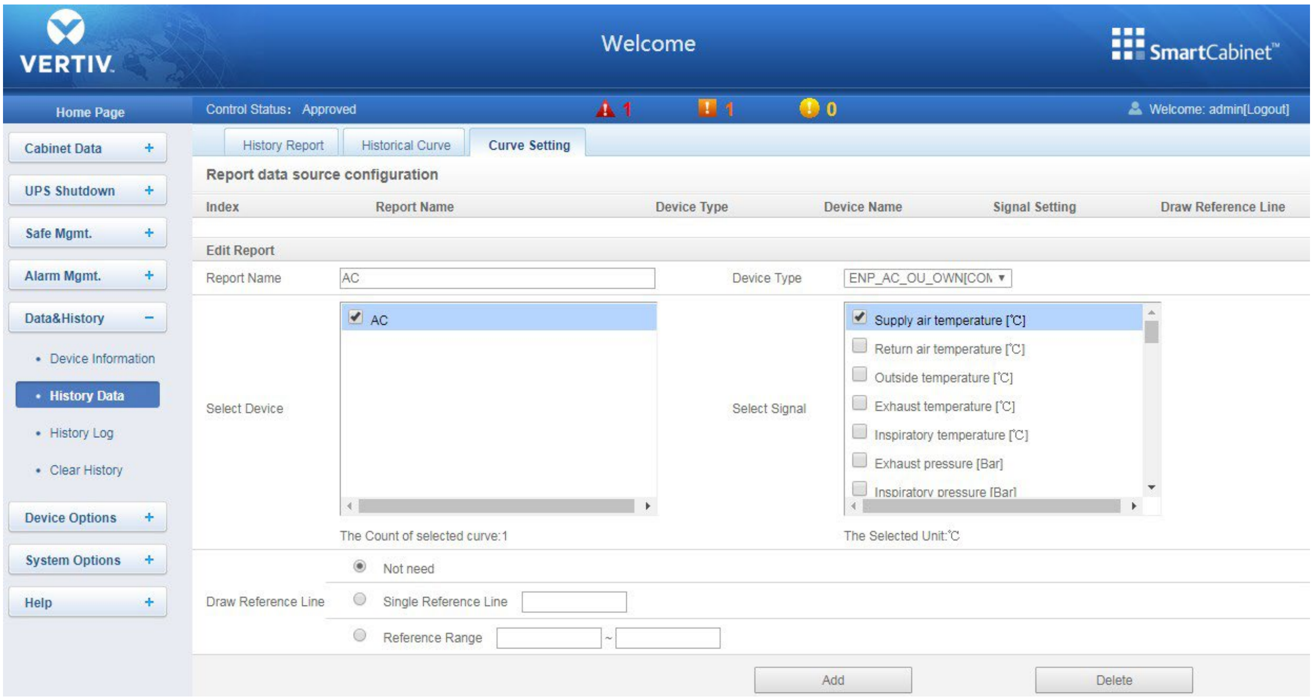
Figure 3-70 Historical data

Historical Data

As shown in Figure 3-70, select a device name (for example, "all devices"), select the type of query (for example, "historical data") and set the start time and deadline (for example, from 2018-06-2911: 00:00 2018-06-29 23:59:59), then click on the search button, the start time to list all the historical data as of the time. Click on the download button to download all query results.

Historical Curve

As shown in Figure 3-71, the report name before selecting the curve, the first curve report set. For example, first select a device type (e.g., "ENP_AC_OU_OWN [COM]"), and then selects the air temperature measured value (optionally also other options), to determine the reference line drawing, and finally enter the name "AC supply air temperature in the report name . " Report back curve, set the start time and deadline, if historical data query that will be generated by the signal history curve.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Information
History Data
History Log
Clear History
Device Options +
System Options +
Help +
History Report
Historical Curve
Curve Setting
Add
Delete

Report data source configuration

Index	Report Name	Device Type	Device Name	Signal Setting	Draw Reference Line

Edit Report

Report Name: AC

Device Type: ENP_AC_OU_OWN[COM

Select Device:
☑ AC

Select Signal:
☑ Supply air temperature [℃]
☐ Return air temperature [℃]
☐ Outside temperature [℃]
☐ Exhaust temperature [℃]
☐ Inspiratory temperature [℃]
☐ Exhaust pressure [Bar]
☐ Inspiratory pressure [Bar]

The Count of selected curve:1

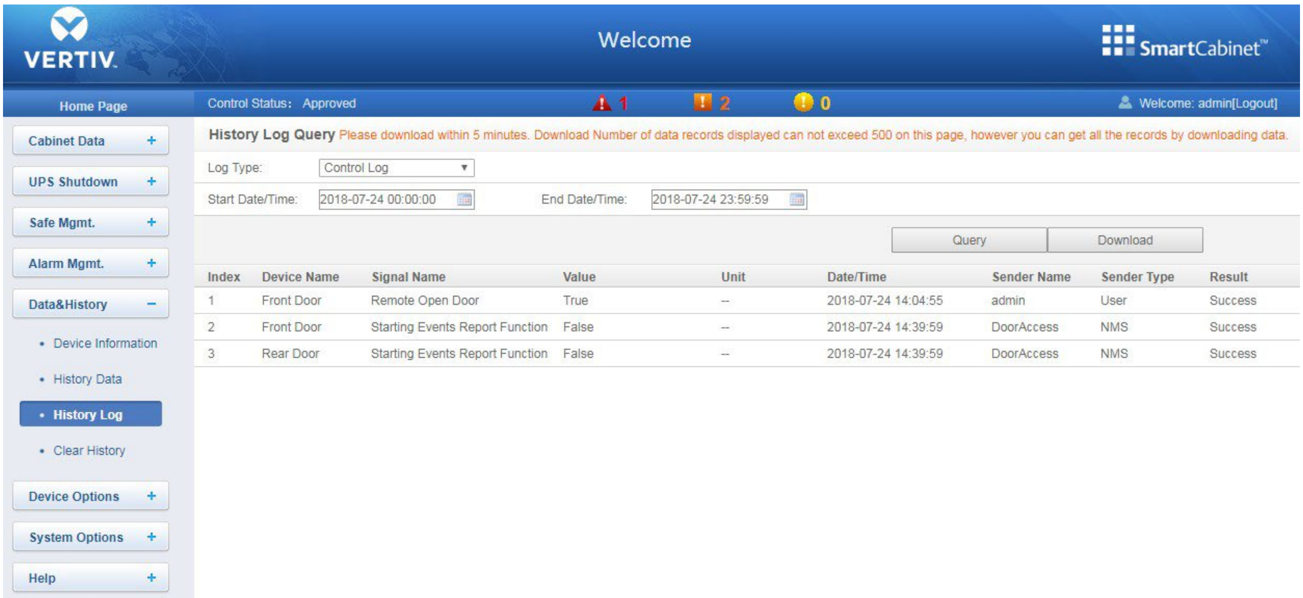
The Selected Unit:℃

Draw Reference Line:
● Not need
○ Single Reference Line
○ Reference Range ~

Figure 3-71 Historical curve

- Log Data

Click log data submenu under the Data Management menu, pop-up page shown in Figure 3-72.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History −
Device Information
History Data
History Log
Clear History
Device Options +
System Options +
Help +
Query
Download

History Log Query Please download within 5 minutes. Download Number of data records displayed can not exceed 500 on this page, however you can get all the records by downloading data.

Log Type: Control Log

Start Date/Time: 2018-07-24 00:00:00

End Date/Time: 2018-07-24 23:59:59

Index	Device Name	Signal Name	Value	Unit	Date/Time	Sender Name	Sender Type	Result
1	Front Door	Remote Open Door	True	--	2018-07-24 14:04:55	admin	User	Success
2	Front Door	Starting Events Report Function	False	--	2018-07-24 14:39:59	DoorAccess	NMS	Success
3	Rear Door	Starting Events Report Function	False	--	2018-07-24 14:39:59	DoorAccess	NMS	Success

Figure 3-72 Log Data

In the page shown in Figure 3-72, select the query type (e.g., "Control Log") and set the start time and deadline (e.g., from 2018-06-29 10:00:00 to 2018-06-29 23: 59:59), then click on the search button, lists all control to the start time up to the time of the log. Click download button to download all query results query results.

- *When the query type "system log" or "log drive", click on the search button, the query results will not be displayed on the page, but will be downloaded directly to the compressed form.*

- Clear data

  Click the Clear Data sub-menu under the Data Management menu, pop-up page shown in Figure 3-73. To clear the alarm history, historical data, statistical data, control and system logs.

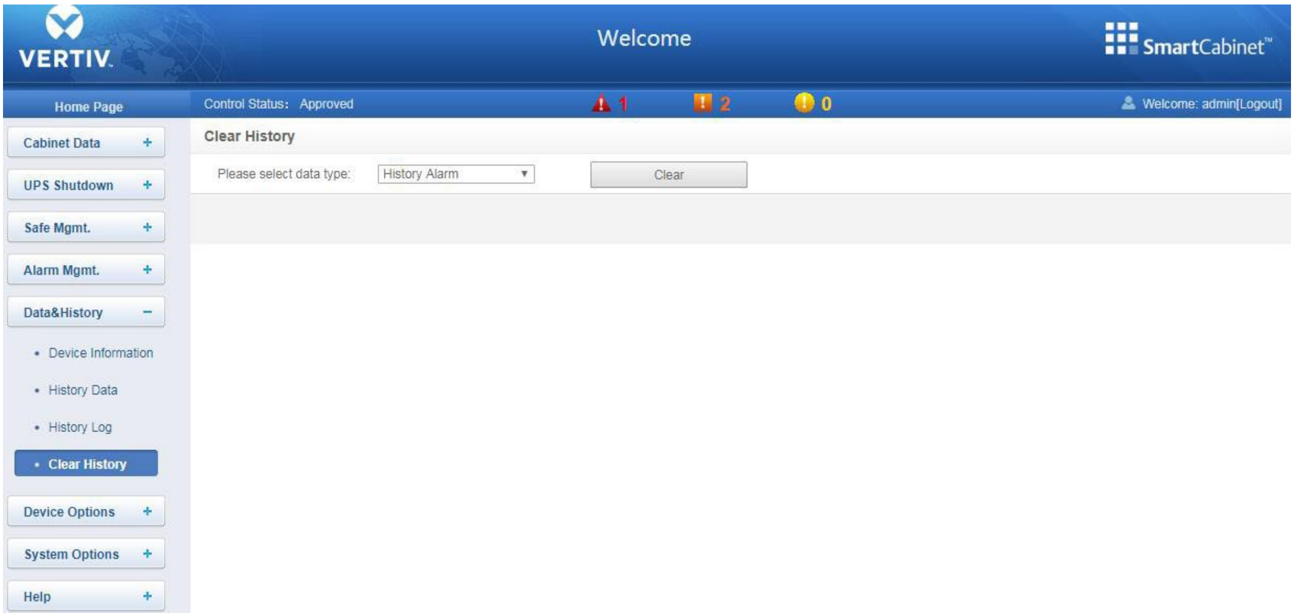

VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
2
0
Welcome: admin[Logout]
Cabinet Data
UPS Shutdown
Safe Mgmt.
Alarm Mgmt.
Data&History
Device Information
History Data
History Log
Clear History
Device Options
System Options
Help
Clear History
Please select data type:
History Alarm
Clear

Figure 3-73 Clear data

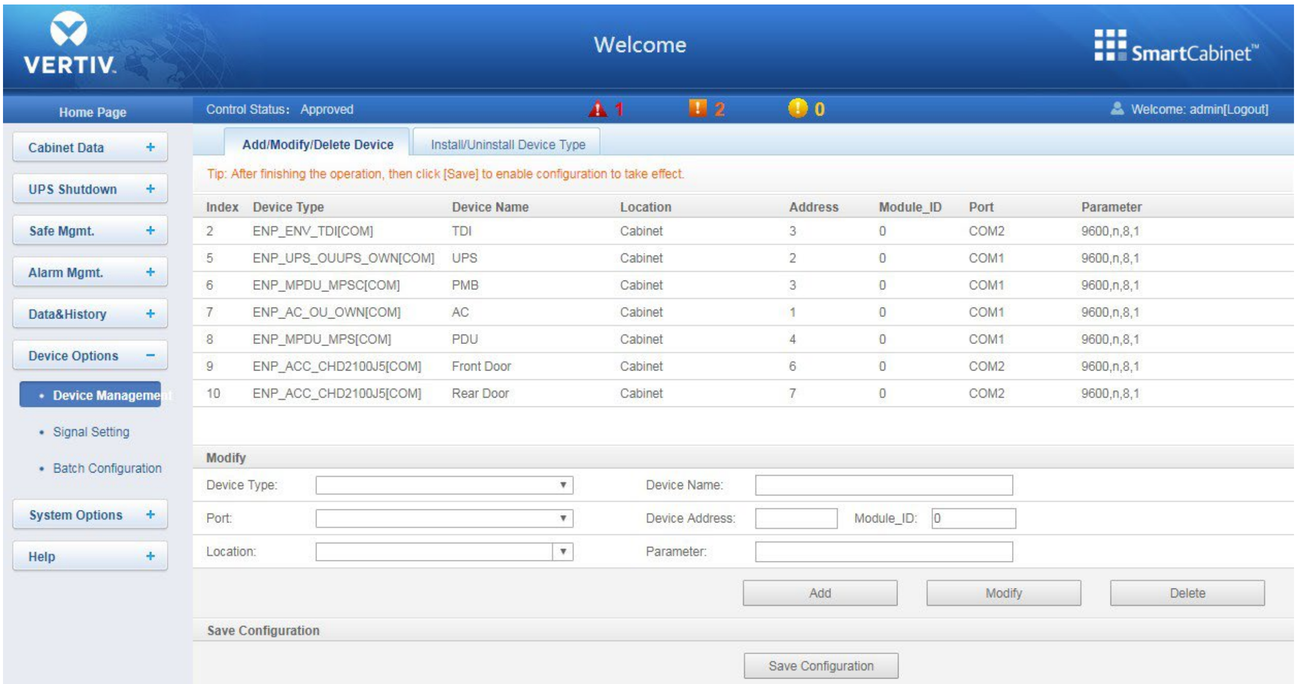
3.4.11 Configuration Management

In the intelligent monitoring system home page, click on the left menu of configuration management, we can see three sub-menu, including: device management, device configuration and bulk configuration signal.

- Device Management

1. Add / Modify / Delete Device

Click on the Device Manager submenu under configuration management menu, pop-up page shown in Figure 3-74.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
• Device Management
• Signal Setting
• Batch Configuration
System Options +
Help +
Add/Modify/Delete Device
Install/Uninstall Device Type
Add
Modify
Delete
Save Configuration

Tip: After finishing the operation, then click [Save] to enable configuration to take effect.

Index	Device Type	Device Name	Location	Address	Module_ID	Port	Parameter
2	ENP_ENV_TDI[COM]	TDI	Cabinet	3	0	COM2	9600,n,8,1
5	ENP_UPS_OUUPS_OWN[COM]	UPS	Cabinet	2	0	COM1	9600,n,8,1
6	ENP_MPDU_MPSC[COM]	PMB	Cabinet	3	0	COM1	9600,n,8,1
7	ENP_AC_OU_OWN[COM]	AC	Cabinet	1	0	COM1	9600,n,8,1
8	ENP_MPDU_MPS[COM]	PDU	Cabinet	4	0	COM1	9600,n,8,1
9	ENP_ACC_CHD2100J5[COM]	Front Door	Cabinet	6	0	COM2	9600,n,8,1
10	ENP_ACC_CHD2100J5[COM]	Rear Door	Cabinet	7	0	COM2	9600,n,8,1

Modify

Device Type:

Device Name:

Port:

Device Address:

Module_ID: 0

Location:

Parameter:

Save Configuration

Figure 3-74 Add / Modify / Delete Device

Page shown in Figure 3-74, the user can add / modify / delete device information, as follows:

- Add Device

  1) Select the type of device;

  2) The input device name in the device name of the text box, or use the default device name;

  3) After selecting the type of device, the port number of drop-down box will be automatically listed in this type of device default port number; If not selected the device type, the port number can not be selected;

  4) In the text box input device address, device address, device address must be from 1 to the XX digits, and the device addresses on the same port number must be unique. Some devices address type does not require an input device, this time, the device address of the text box will be grayed out and can not be edited. When an apparatus with a plurality of modules, necessary to add module address, the address must be from the module 1 to the XX digits, and the module address of an apparatus does not allow repeated;

  5) Select the input device or location;

  6) In the communication parameters input text box communication parameters, in a case where the device type is determined, the prompt will be displayed on the text box of the communication parameters of the communication parameters, communication parameters including the type and format of default parameters of the communication device;

  7) Click the Add Device button, playing at the dialog, and increases in the device list a device information; click the Save Configuration button, you are prompted to save a successful interface will restart, point to determine user security authentication dialog box will pop up; if you click Cancel button , additional equipment is invalid;

8) Enter the current user's login password, click the OK button after the jump to check through a system reboot interface, the system is restarted, the newly added device to take effect.

9) After system restart, the newly added device will appear in the device list management page.

- *SmartCabinet 2-P intelligent system configuration recommended by the one-push local LCD display, intelligent monitoring unit directly through the web page to add a device can not synchronize the local display data to the LCD.*

- Delete Device

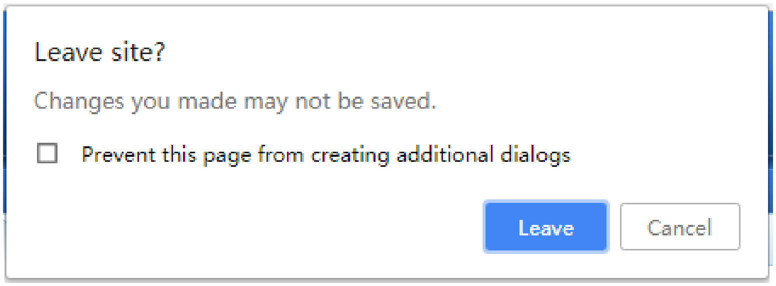
1. Select the device you want to delete in the list of devices;
2. Click the Delete button will remove the device equipment;
3. Click Save Configuration button to remove the device to take effect, the specific operation and the addition of new equipment the same.

- *Click the button to remove the device before, if you change information on this device, the device can not be deleted.*

- Modify the device

1. Select modified device in the device list;
2. Modify equipment information;
3. Click the Edit button to modify the device device information;
4. Click Save Configuration button to add a device to take effect, the specific operation and add a new device same.

After you add / modify / delete pages a device to add, modify or delete operation, not click the Save Configuration button to validate the configuration, when leaving the page will pop up a message shown in Figure 3-75, the user is prompted to save the configuration.



Leave site?

Changes you made may not be saved.

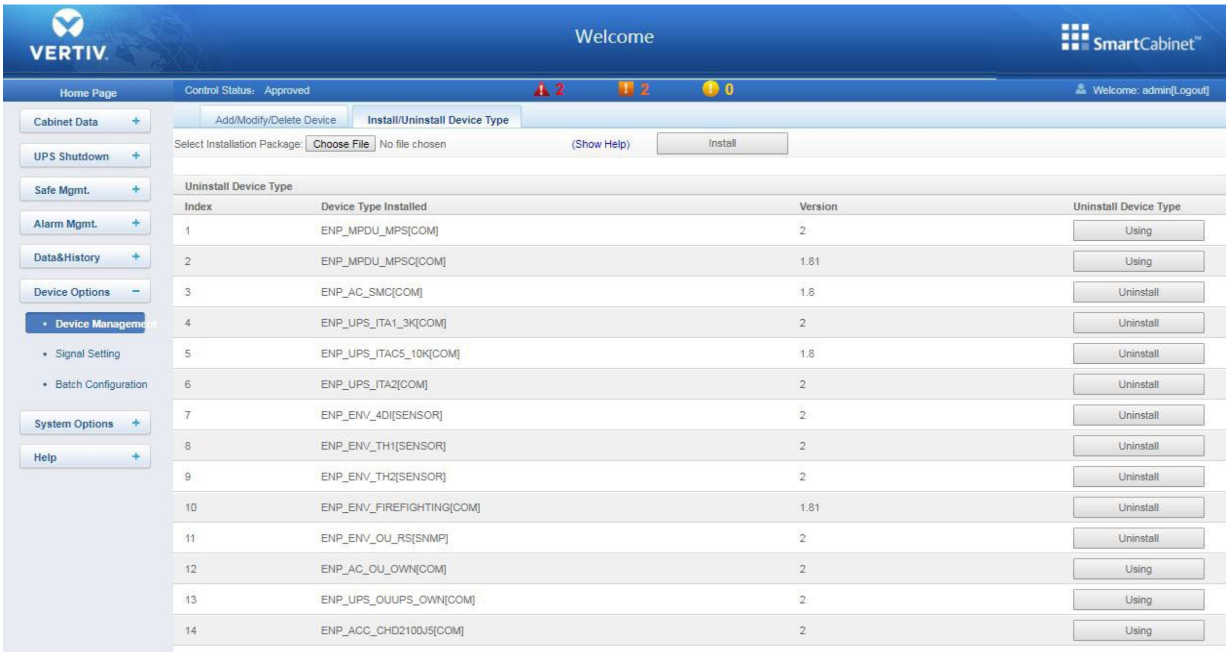
☐ Prevent this page from creating additional dialogs

Figure 3-75 Tips

- *Save Configuration Button one time to save all operating results.*

- Install / uninstall device type

Click on the Device Manager submenu under configuration management menu, then click the Install / Uninstall tab device type, pop-up page shown in Figure 3-76.


VERTIV
Welcome
SmartCabinet™
Home Page
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
Device Management
Signal Setting
Batch Configuration
System Options +
Help +
Add/Modify/Delete Device
Install/Uninstall Device Type
Choose File
(Show Help)
Install

Control Status: Approved ⚠ 2 ❗ 2 ❗ 0

Select Installation Package: No file chosen

Uninstall Device Type

Index	Device Type Installed	Version	Uninstall Device Type
1	ENP_MPDU_MPS[COM]	2	Using
2	ENP_MPDU_MPSC[COM]	1.81	Using
3	ENP_AC_SMC[COM]	1.8	Uninstall
4	ENP_UPS_ITA1_3K[COM]	2	Uninstall
5	ENP_UPS_ITAC5_10K[COM]	1.8	Uninstall
6	ENP_UPS_ITA2[COM]	2	Uninstall
7	ENP_ENV_4DI[SENSOR]	2	Uninstall
8	ENP_ENV_TH1[SENSOR]	2	Uninstall
9	ENP_ENV_TH2[SENSOR]	2	Uninstall
10	ENP_ENV_FIREFIGHTING[COM]	1.81	Uninstall
11	ENP_ENV_OU_RS[SNMP]	2	Uninstall
12	ENP_AC_OU_OWN[COM]	2	Using
13	ENP_UPS_OUUPS_OWN[COM]	2	Using
14	ENP_ACC_CHD2100J5[COM]	2	Using

Figure 3-76 Install / uninstall device type

Click the Choose File button, you can upload from a local directory drive configuration package (.iru file format), click on the Install button to install a new device type.

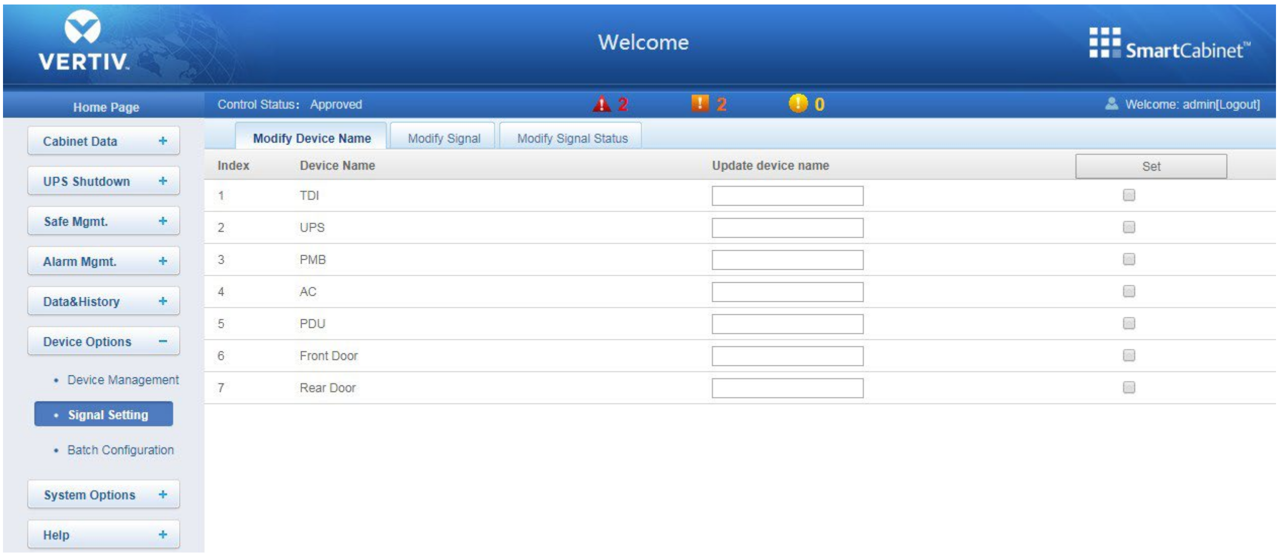
- *System supported device type and number of the driving system space remaining configuration the size of the package itself, but not more than 64 devices.*

The lower right portion of the page displays the device type information equipment has been installed, click the Uninstall button, a confirmation dialog box. Click the OK button, the pop-up security for user authentication dialog box, enter the current user's login password, click the OK button to uninstall the device type.

- *When installed, the device type, if present, and the device driver version higher than the drive to be installed, the device will not repeat the installation type;*
- *If no version information is the installation package or the version information and software version does not match the type of the apparatus can not be installed;*
- *If you have equipment to use this type of equipment, the Uninstall button will be grayed out display use, you can not uninstall the device type.*

- Device Signal Configuration

Pointing device signal configuration submenu configuration management menu, pop-up page shown in Figure 3-77.


VERTIV.
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
2
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
• Device Management
• Signal Setting
• Batch Configuration
System Options +
Help +
Modify Device Name
Modify Signal
Modify Signal Status
Set

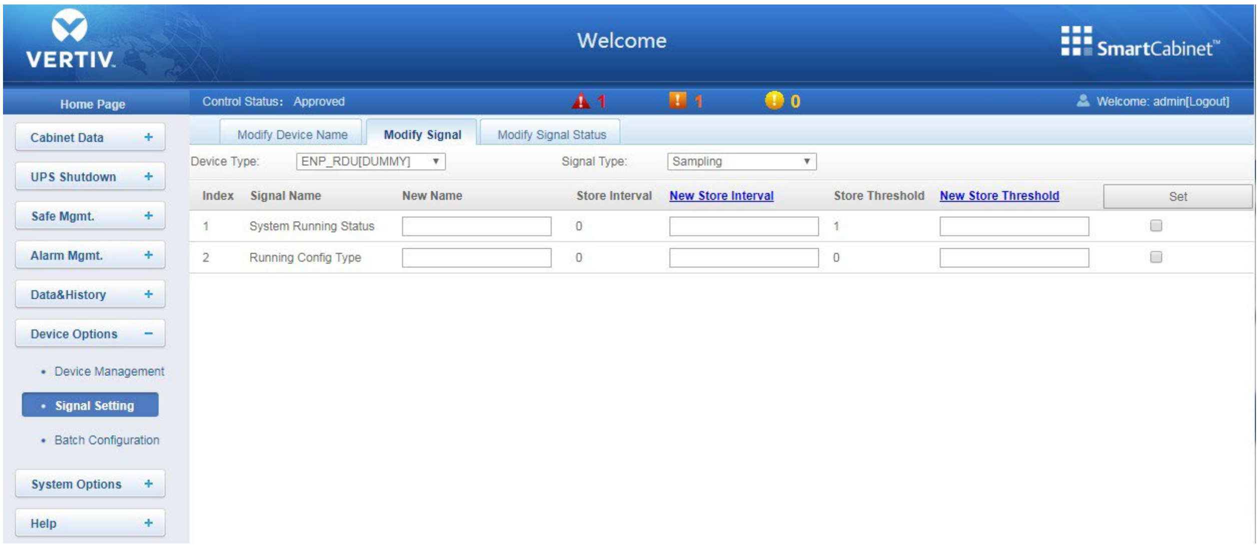
Index	Device Name	Update device name	Set
1	TDI		☐
2	UPS		☐
3	PMB		☐
4	AC		☐
5	PDU		☐
6	Front Door		☐
7	Rear Door		☐

Figure 3-77 Modify the device name

Page shown in Figure 3-77, the user can modify the device name. Enter the new device name, click the Set button to confirm the modification in the device name.

- Signal status modification signal and modifications

Click the Edit submenu signal configuration management menu, pop-up page shown in Figure 3-78.

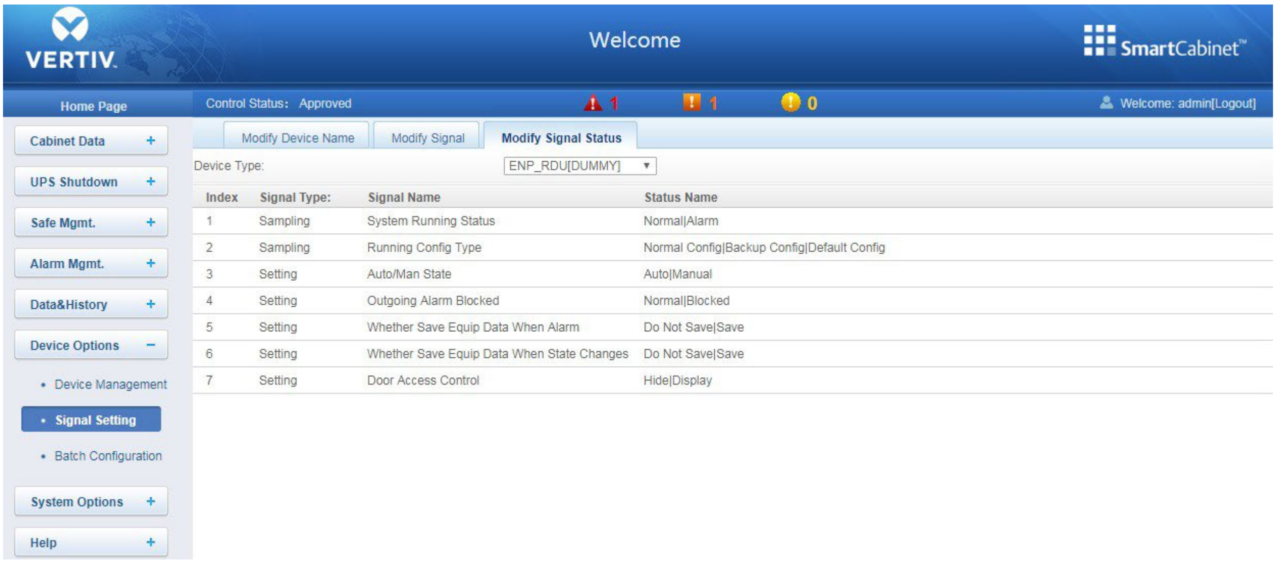

VERTIV.
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
• Device Management
• Signal Setting
• Batch Configuration
System Options +
Help +
Modify Device Name
Modify Signal
Modify Signal Status
Set

Device Type: ENP_RDU[DUMMY]
Signal Type: Sampling

Index	Signal Name	New Name	Store Interval	New Store Interval	Store Threshold	New Store Threshold	Set
1	System Running Status		0		1		☐
2	Running Config Type		0		0		☐

Figure 3-78 Modify signal

Click the Edit submenu signal state configuration management menu, select the device type, select the type of signal, signal status view, the pop-up page shown in Figure 3-79.


VERTIV
Welcome
SmartCabinet™
Home Page
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
Device Management
Signal Setting
Batch Configuration
System Options +
Help +
Modify Device Name
Modify Signal
Modify Signal Status

Control Status: Approved

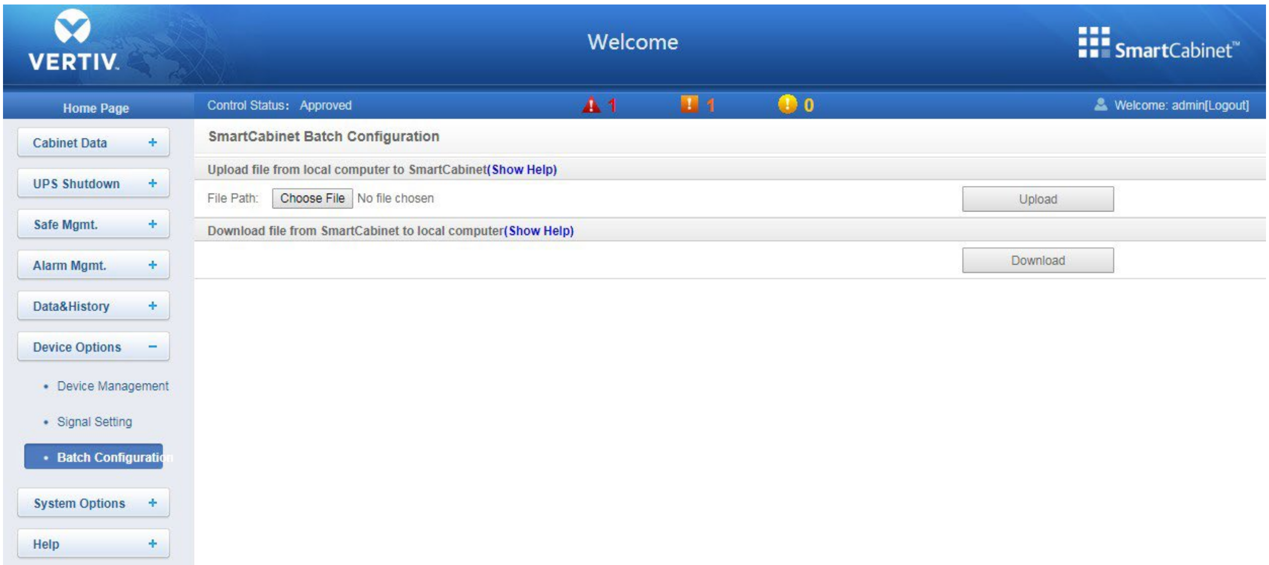
Device Type: ENP_RDU[DUMMY]

Index	Signal Type:	Signal Name	Status Name
1	Sampling	System Running Status	Normal|Alarm
2	Sampling	Running Config Type	Normal Config|Backup Config|Default Config
3	Setting	Auto/Man State	Auto|Manual
4	Setting	Outgoing Alarm Blocked	Normal|Blocked
5	Setting	Whether Save Equip Data When Alarm	Do Not Save|Save
6	Setting	Whether Save Equip Data When State Changes	Do Not Save|Save
7	Setting	Door Access Control	Hide|Display

Figure 3-79 Modify the signal status

- Batch Configuration

Batch Size menu click on Configuration Management Configuration sub-menu, pop-up page shown in Figure 3-80.


VERTIV
Welcome
SmartCabinet™
Home Page
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options −
Device Management
Signal Setting
Batch Configuration
System Options +
Help +
Choose File
Upload
Download

Control Status: Approved

SmartCabinet Batch Configuration

Upload file from local computer to SmartCabinet(Show Help)

File Path: No file chosen

Download file from SmartCabinet to local computer(Show Help)

Figure 3-80 Batch Configuration

Users can perform upload and download operations to complete the batch system configuration.

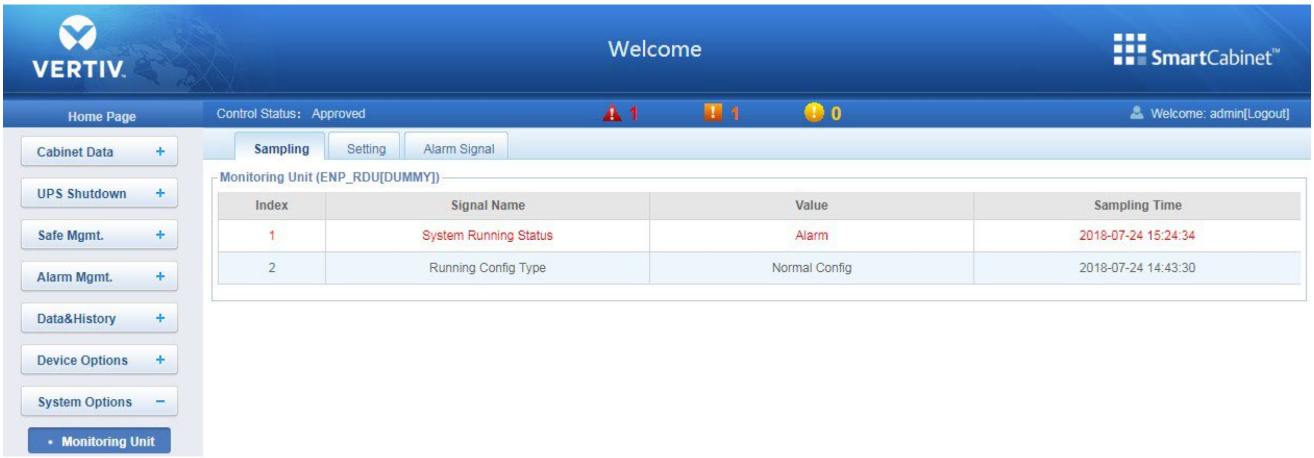
- *Only admin users have privileges to perform batch configuration, if you can not execute batch configuration, click View help get help.*
- *After the batch configuration, the file is downloaded to the local encrypted system.*

3.4.12 System Settings

In the intelligent monitoring system home page, click on the left side of the system setup menu, showing eight submenus, including: monitoring unit, network settings, user management, time alignment, restore the default, site information settings, system upgrades and title bar settings.

- Monitoring unit

The monitoring unit is provided for a signal of its own intelligent monitoring system, including signal acquisition, signal and the alarm signal is provided, as shown in Figure 3-81.


VERTIV
Welcome
SmartCabinet™
Home Page
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
• Monitoring Unit
Sampling
Setting
Alarm Signal

Control Status: Approved ▲ 1 ! 1 ● 0

Monitoring Unit (ENP_RDU[DUMMY])

Index	Signal Name	Value	Sampling Time
1	System Running Status	Alarm	2018-07-24 15:24:34
2	Running Config Type	Normal Config	2018-07-24 14:43:30

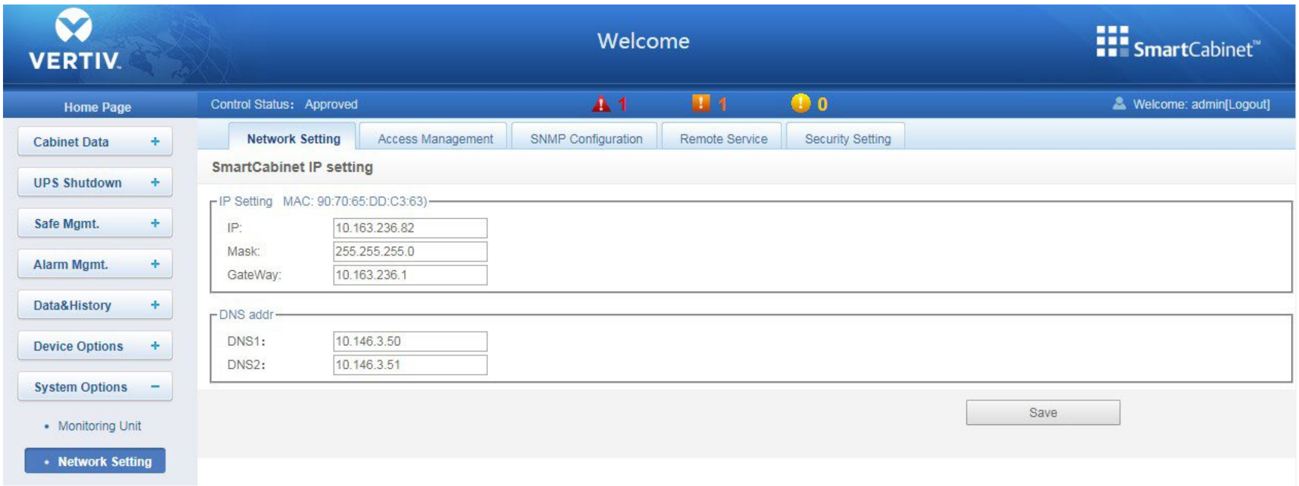
Figure 3-81 Monitoring unit (signal acquisition)

Method for Monitoring the operation signal acquisition unit, setting signal, an alarm signal three sub-pages, refer Acquire the Signal section for Cabinet information.

- *If the set signal set obstruction blocking the current alarm, the alarm warning the current blocking occurs, in which case:*
- *Display warning signal current alarm, but does not send alarm notifications, history is not saved to the alarm after alarm disappearance;*
- *The current alarm blocked blocking settings automatically released after 24 hours.*

- Network Settings
- IP settings

Click the System Settings submenu Network Settings menu, pop-up page shown in Figure 3-82.


VERTIV
Welcome
SmartCabinet™
Home Page
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
• Monitoring Unit
• Network Setting
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
Save

Control Status: Approved ▲ 1 ! 1 ● 0

SmartCabinet IP setting

IP Setting MAC: 90:70:65:DD:C3:63)

IP: 10.163.236.82
Mask: 255.255.255.0
GateWay: 10.163.236.1

DNS addr

DNS1: 10.146.3.50
DNS2: 10.146.3.51

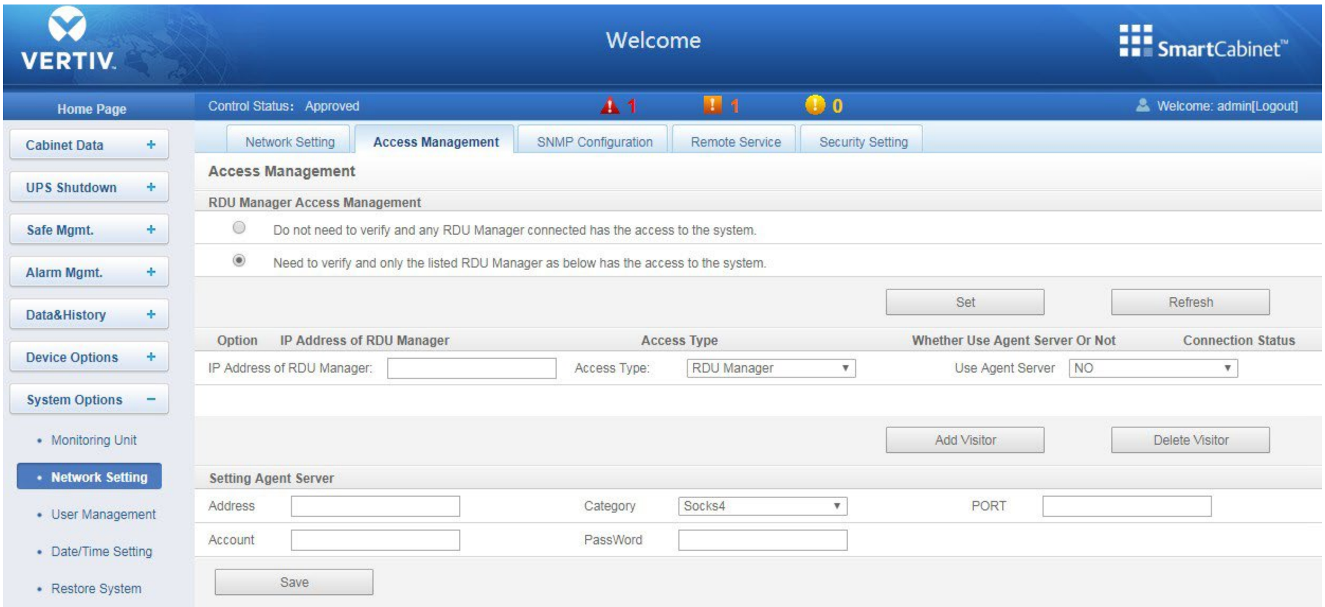
Figure 3-82 IP settings

Page shown in Figure 3-82, the user can configure the network parameters is as follows: IP address, subnet mask, gateway address, DNS server preferred and alternate DNS server. After modifying network parameters, click the Save button to enable the parameters parameters.

- *After modifying the IP address, by default the settings page moves to the new network address to log back into the intelligent monitoring system.*

- Access control

Click the System Settings network settings submenu menu, then click the button to access control, the pop-up page as shown in Figure 3-83.


VERTIV
Welcome
SmartCabinet™
Home Page
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
Set
Refresh
Add Visitor
Delete Visitor
Save

Control Status: Approved 1 1 0 Welcome: admin[Logout]

Access Management

RDU Manager Access Management

○ Do not need to verify and any RDU Manager connected has the access to the system.

● Need to verify and only the listed RDU Manager as below has the access to the system.

Option	IP Address of RDU Manager	Access Type	Whether Use Agent Server Or Not	Connection Status

IP Address of RDU Manager: Access Type: RDU Manager Use Agent Server NO

Setting Agent Server

Address Category Socks4 PORT

Account PassWord

Figure 3-83 Access control

When adding a visitor, enter the new IP address of the RDU manager in the RDU Manager IP text box and click the Add Visitor button to complete the configuration.

- *The system can add up to 3-Rui Manager IP address.*
- *If you choose to use a proxy when adding a visitor, you also need to configure a proxy server.*

- SNMP Settings

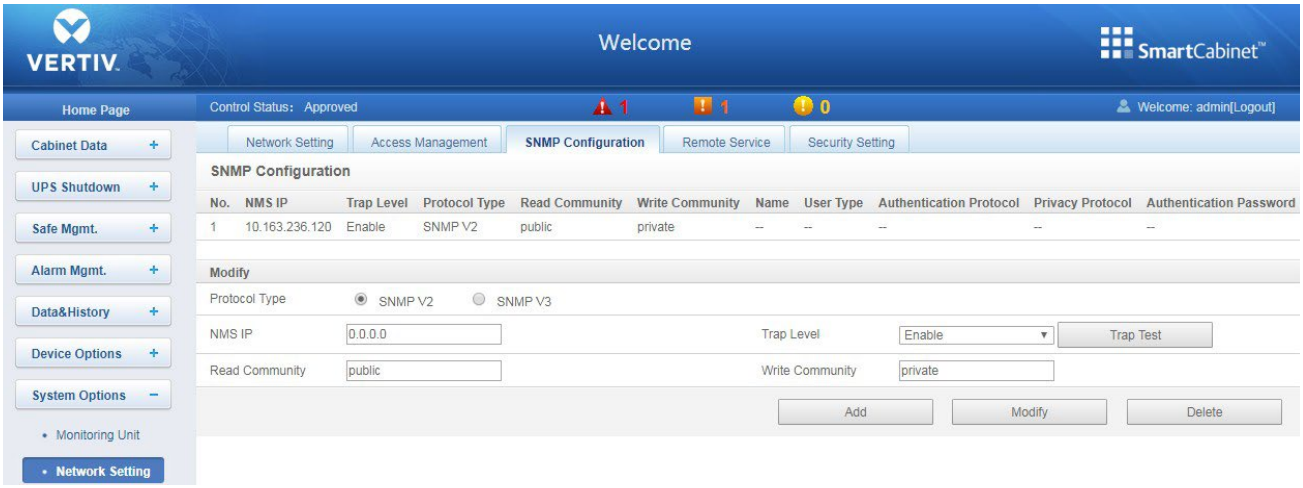
Click the System Settings Network Settings submenu under the menu, then click the Settings button SNMP, SNMP agent can support two versions V2 and V3 configuration, intelligent monitoring system for SNMP agent:

As shown in Figure 3-84, SNMP V2 of the setting is as follows:

1) Set NMS IP (SNMP proxy data receiving end host IP address);

2) Set whether to send Trap: "Enable" or "Disable";

3) Other parameters remain at their default values.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
• Monitoring Unit
• Network Setting
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
Trap Test
Add
Modify
Delete

SNMP Configuration

No.	NMS IP	Trap Level	Protocol Type	Read Community	Write Community	Name	User Type	Authentication Protocol	Privacy Protocol	Authentication Password
1	10.163.236.120	Enable	SNMP V2	public	private	--	--	--	--	--

Modify

Protocol Type ● SNMP V2 ○ SNMP V3

NMS IP: 0.0.0.0

Trap Level: Enable

Read Community: public

Write Community: private

Figure 3-84 SNMP (v2) set

As shown in Figure 3-85, SNMP V3 the setting is as follows:

1) Set NMS IP (SNMP proxy data receiving end host IP address);

2) Select whether Trap Send: "allowed", "No";

3) Set the user name;

4) Select User type: "Authentication and Encryption", "authentication without encryption", "no authentication, no encryption";

5) Select the authentication type: "MD5", "SHA";

6) Select the encryption type: "DES";

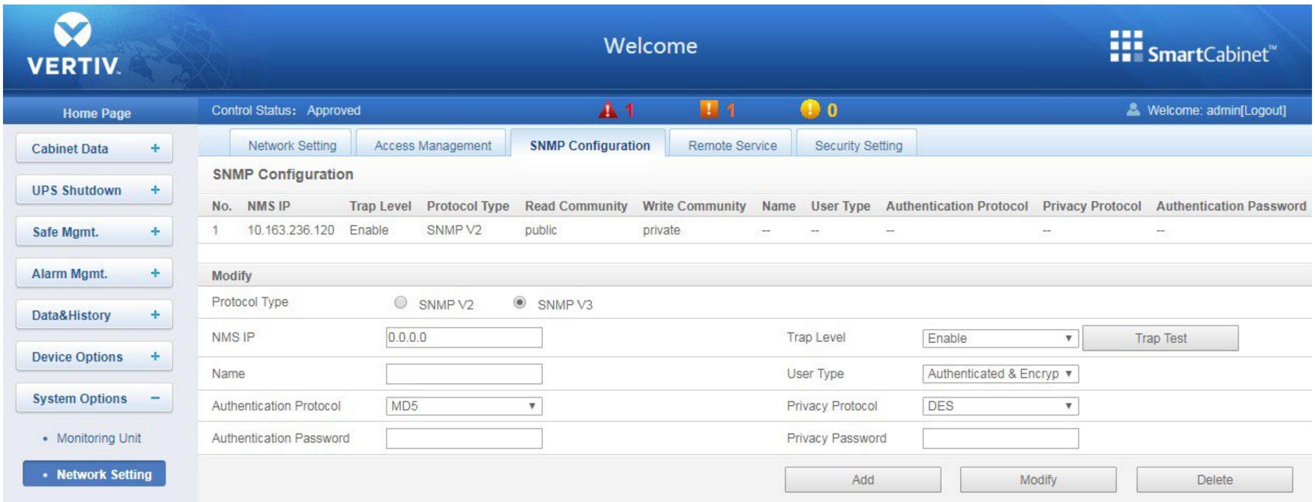
7) Set custom authentication and encryption algorithms password.

- *On the basis of SNMP V2, SNMP V3 adding user authentication and encryption policies;*
- *If the user types selected "no authentication, no encryption" policy, authentication type and encryption type drop-down box is grayed out and can not be set;*
- *Stage encryption type supports only DES encryption types;*
- *Users need to customize at least eight characters password authentication and encryption, and the password must be the data receiving terminal and the SNMP agent of the host provided the same password, decrypts the received or not.*

After completion of parameter settings, click the Add button, you can increase the NMS;

To modify NMS settings, select the need to modify the NMS, modify the settings, then click the Modify button to save the settings;

To delete NMS, select the need to remove the NMS, and then click the Delete button to delete NMS.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
Trap Test
Add
Modify
Delete

SNMP Configuration

No.	NMS IP	Trap Level	Protocol Type	Read Community	Write Community	Name	User Type	Authentication Protocol	Privacy Protocol	Authentication Password
1	10.163.236.120	Enable	SNMP V2	public	private	--	--	--	--	--

Modify

Protocol Type ○ SNMP V2 ● SNMP V3

NMS IP: 0.0.0.0

Trap Level: Enable

Name:

User Type: Authenticated & Encryp

Authentication Protocol: MD5

Privacy Protocol: DES

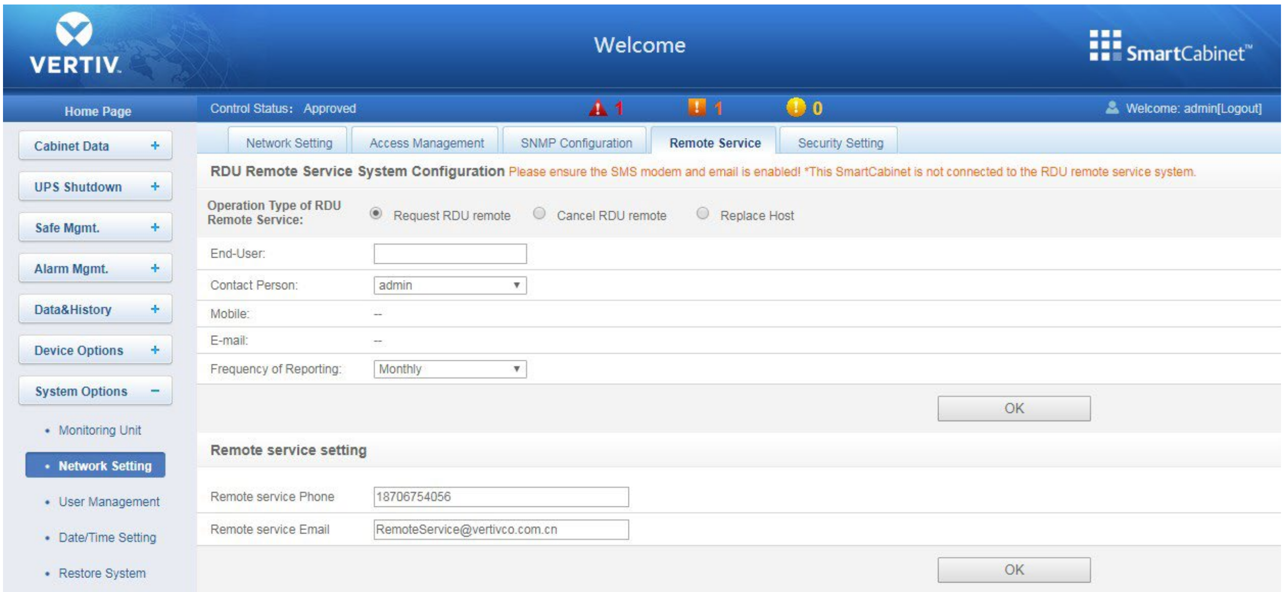
Authentication Password:

Privacy Password:

Figure 3-85 SNMP (v3) Set

- Remote service settings

Click the System Settings Network Settings submenu under the menu, then click the Settings button remote service, the pop-up page shown in Figure 3-8.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
OK
OK

RDU Remote Service System Configuration Please ensure the SMS modem and email is enabled! *This SmartCabinet is not connected to the RDU remote service system.

Operation Type of RDU Remote Service: ● Request RDU remote ○ Cancel RDU remote ○ Replace Host

End-User:

Contact Person: admin

Mobile: --

E-mail: --

Frequency of Reporting: Monthly

Remote service setting

Remote service Phone: 18706754056

Remote service Email: RemoteService@vertivco.com.cn

Figure 3-86 Remote service settings

Remote service setting request includes a remote service, remote services and the local host cancellation three replacement part, while the user can set the communication parameters of the remote service system.

Remote service request:

For establishing a remote hosting relationship

1) Enter the customer name in a custom client Name text box;

2) Select the remote service customer contact, when a contact is selected, it will display the corresponding phone and Email;

- *Remote customer service in contact with prior system settings -> set user management, and must provide phone or Email, otherwise the request can not be hosted. The setting method of the present refer to the user management section.*

3) Select the reporting period: "Month", "Quarter";
4) Select your preferred means of communication: "Email", "GPRS";
5) Click the OK button to send the request to a remote hosting.

Cancel Remote Services:

Managed services for cancellation has been established

Select Cancel remote service, click the OK button to send the command to cancel the current remote service.

- *Cancel remote service is only valid under the premise of remotely hosted services has been established, or else click the OK button prompts fail.*

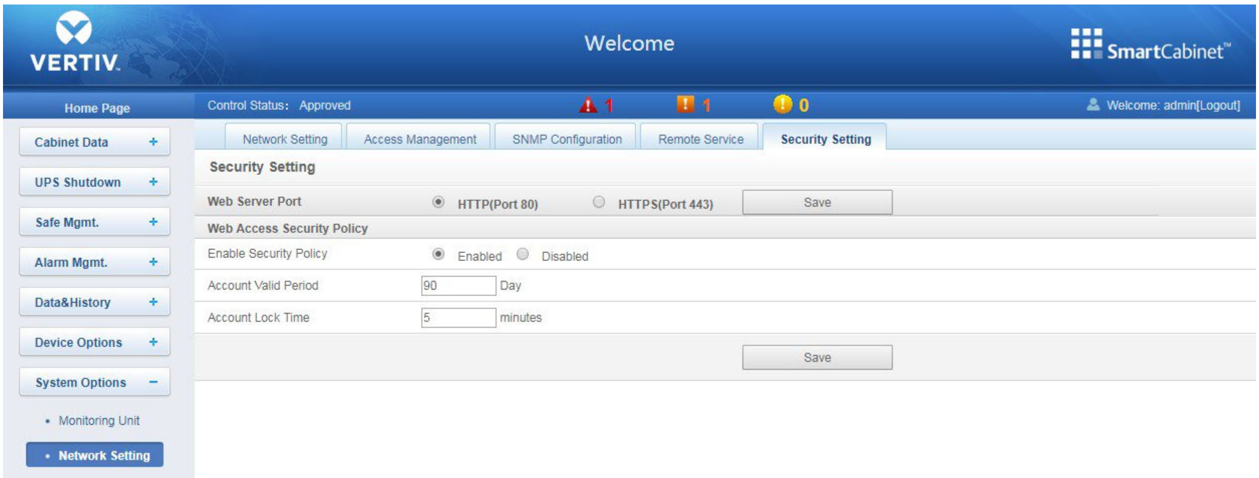
- Local Host Replacement

Replace the remote service for the local host

When the host that establishes the remote service wants to quit, but wants to retain the established remote service relationship, the user needs to replace the local host to join the remote service. The specific setting method is the same as the remote service request, and the hardware serial number of the replaced host can be added.

Security Settings

Click the Network Settings submenu under the System Settings menu, then click the Security Settings button to bring up the page shown in Figure 3-87.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting

Security Setting

Web Server Port ● HTTP(Port 80) ○ HTTPS(Port 443) Save

Web Access Security Policy

Enable Security Policy ● Enabled ○ Disabled

Account Valid Period 90 Day

Account Lock Time 5 minutes

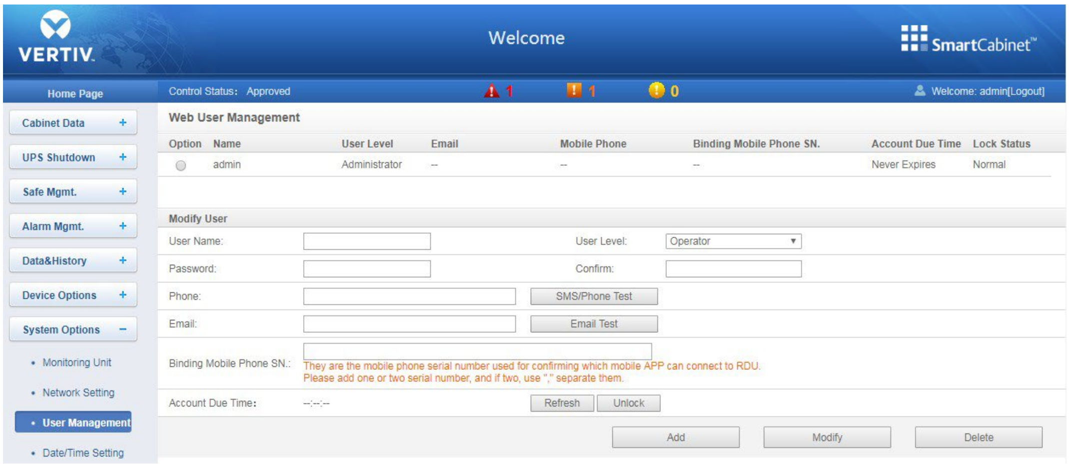
Save

Figure 3-87 Access control

Select Web access and Web access security policies, click on the Save button to complete the configuration.

3.4.13 User Management

Click the System Setup User Management submenu menu, pop-up page shown in Figure 3-88.


VERTIV.
Welcome
SmartCabinet™
Home Page
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
1
1
0
Welcome: admin[Logout]
SMS/Phone Test
Email Test
Refresh
Unlock
Add
Modify
Delete

Control Status: Approved

Web User Management

Option	Name	User Level	Email	Mobile Phone	Binding Mobile Phone SN.	Account Due Time	Lock Status
○	admin	Administrator	--	--	--	Never Expires	Normal

Modify User

User Name:
User Level: Operator
Password:
Confirm:
Phone:
Email:
Binding Mobile Phone SN.: They are the mobile phone serial number used for confirming which mobile APP can connect to RDU. Please add one or two serial number, and if two, use "," separate them.
Account Due Time: --:--:--

Figure 3-88 User Management

The page shown in Figure 3-88, the user can add users, modify and remove users.

- Increase user

1. User name in the text box to enter a user name;
2. Select the user's permission;
3. The user password, the password can not be empty, and at least six letters or numbers;
4. Confirm Password Repeat password in the text box;
5. (Optional) Enter a user telephone numbers, phone numbers and characters can use the following numbers: 0123456789, +;
6. (Optional) Enter the e-mail address;
7. Click the Add User button will pop up security for user authentication dialog box, enter the current user's login password, click the OK button to add a new user.

- *User name can only use letters, numbers and - and _ and the first character must be a letter or number.*

- Delete users

1. Select the user to be deleted in the user list;
2. Click the Delete User button will pop up a confirmation dialog box, click the OK button will pop up security for user authentication dialog box, enter the current user's login password, click the OK button to delete the selected user.

- *Admin user can not be deleted.*

- Modify User

1. Select the user you want to modify in the user list;
2. Modify user information;

3. Click the Edit User button will pop up security for user authentication dialog box, enter the current user's login password, click the OK button, the user information after the changes take effect.

Log intelligent monitoring system users can be divided into four groups of users, they have different security levels and user rights, specific information see Table 3-3.

Table 3-3 User security level

Security Level	User group	User Rights
Class A	Viewers	All users can browse device information
Class B	Operator	The operator may send control commands to the smart device
Grade C	Engineer	Engineers have the following rights: to send control commands to the smart device; browse, control, modify the parameter; downloading files; modify their own user information
Grade D	Administrator	Administrators have full access to: send control commands to the smart device; browse, control, modify parameters; upload and download files; modify, add, delete user information; air conditioning group control parameter setting; system firmware upgrade

In the page shown in Figure 3-89, select the current user, can be SMS / telephone alarm notification e-mail alert notifications testing and testing.

Before using the test function, the user must first current SMS module and the mail server configuration, specific information, refer **Alarm Notification Configuration.**

SMS / telephone alarm notification test

Enter the phone number, click on the SMS / telephone alarm notification test button to test the current user's phone number is on. If the test users receive text messages and phone, it indicates that the test was successful. Otherwise the test fails, check whether the current user's phone number is correct, messaging MODEM connected correctly.

Email alarm notification test

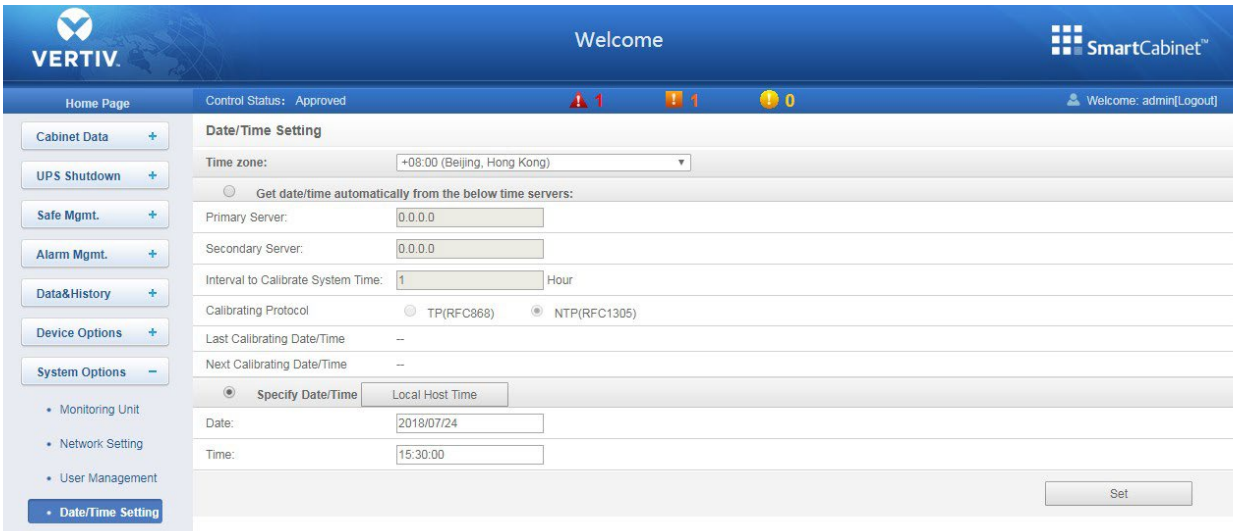
Enter the e-mail address, click on the e-mail alert notification test button to verify the current user's email address. If you receive the test message, it indicates that the verification is successful, otherwise the verification fails, check to see if any information is entered incorrectly.

note

- *Increase, when modified by the user must enter a phone number or email address, or can not complete the setup.*

3.4.14 Time Calibration

Click the System Settings sub-menu under the time calibration can calibrate the clock menu. Figure 3-89, the intelligent monitoring system can automatically obtain the time from a time server. And sequentially input from the master IP address of the server, input correction time interval, select and set the time zone correction protocol type, and then click the button is provided such that the settings take effect.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
1
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Local Host Time
Set

Date/Time Setting

Time zone: +08:00 (Beijing, Hong Kong)

○ Get date/time automatically from the below time servers:

Primary Server: 0.0.0.0

Secondary Server: 0.0.0.0

Interval to Calibrate System Time: 1 Hour

Calibrating Protocol ○ TP(RFC868) ● NTP(RFC1305)

Last Calibrating Date/Time --

Next Calibrating Date/Time --

● Specify Date/Time

Date: 2018/07/24

Time: 15:30:00

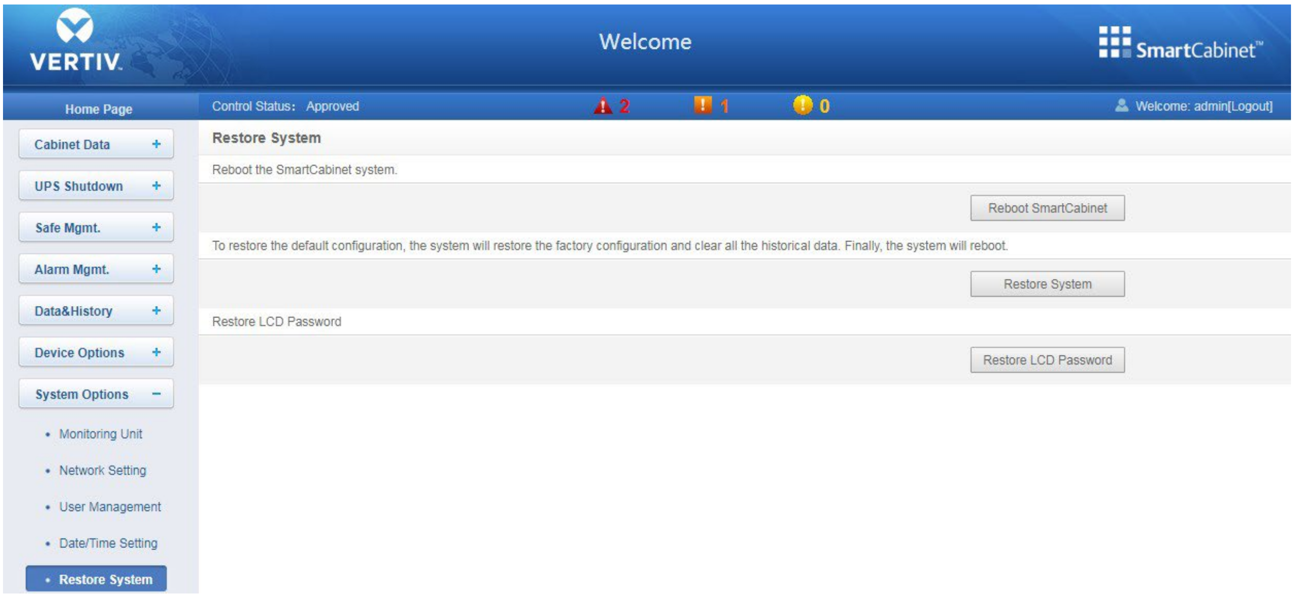
Figure 3-89 Time Calibration

Intelligent monitoring system can also access to the local time, and click on the button access to the local time when the school chose to use the current time to get the machine time and then click the Settings button for the new time to take effect.

- *Time alignment is selected by default when the current time school.*

- Reset

Click the System Restore Default Settings submenu under the menu, pop-up page shown in Figure 3-90.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Reboot SmartCabinet
Restore System
Restore LCD Password

Restore System

Reboot the SmartCabinet system.

To restore the default configuration, the system will restore the factory configuration and clear all the historical data. Finally, the system will reboot.

Restore LCD Password

Figure 3-90 System Reset

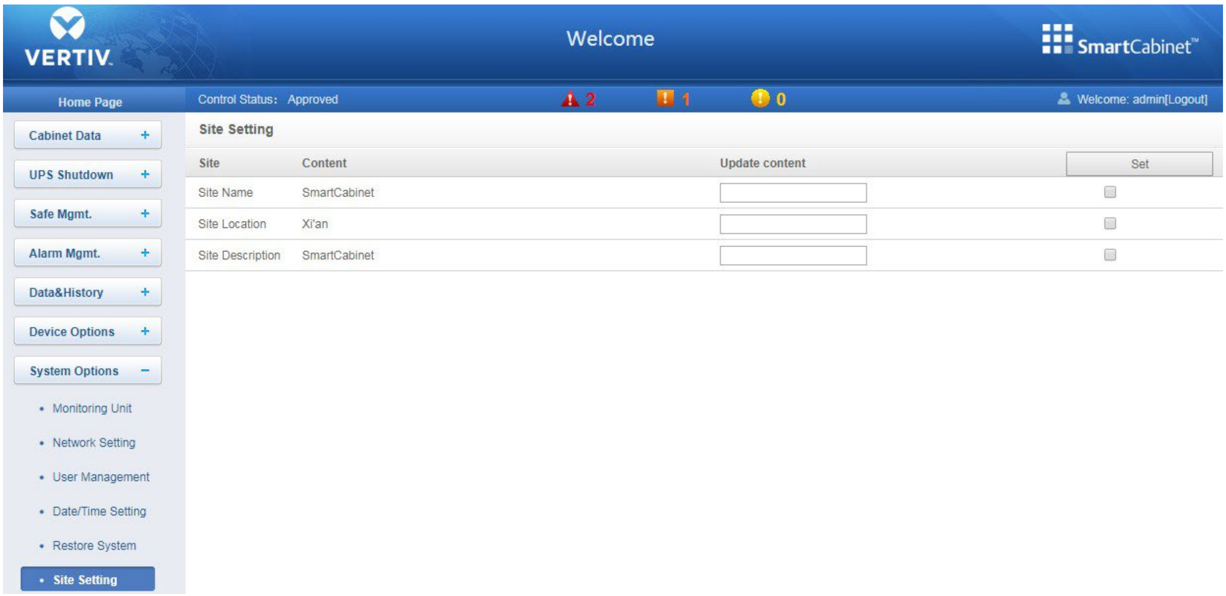
- Click the button to restart SmartCabinet 2-P realize the system is restarted.

- Click the Restore Default button to restore the intelligent monitoring system to the default settings.
- Click the password recovery LCD button to trigger local LCD display password recovery.

> - *If you use the restore function, intelligent monitoring system will restore the original configuration. After the recovery operation, make sure to wait one minute and then re-enter the system through the intelligent monitoring network to make it a complete initialization.*

- Site settings

Click Site Information System Settings submenu under the Settings menu, pop-up page shown in Figure 3-91.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Site Setting

Site Setting

Site	Content	Update content	Set
Site Name	SmartCabinet		☐
Site Location	Xi'an		☐
Site Description	SmartCabinet		☐

Figure 3-91 Site settings

As shown in Figure 3-91, the user can modify the intelligent monitoring system of site information, including the name of the site, site location and site description.

- System Upgrade

Click the System Settings submenu under the System Upgrade menu, pop-up page shown in Figure 3-92.

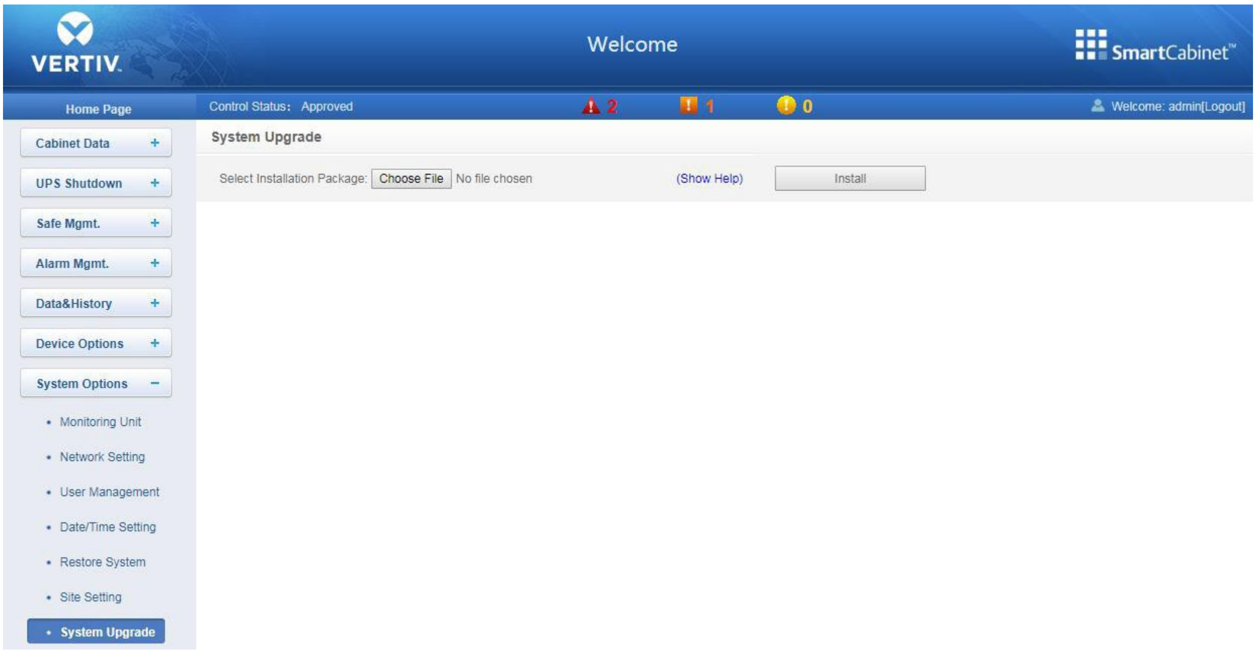

VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Site Setting
System Upgrade
System Upgrade
Select Installation Package:
Choose File
No file chosen
(Show Help)
Install

Figure 3-92 System Upgrade

Page shown in Figure 3-92, click the Choose File button to download the upgrade package from a local directory (.rdu file format), then click on the Install button, a firmware upgrade.

- *Intelligent monitoring system to support incremental upgrades.*

- Title Bar Settings

Click on the title bar System Settings submenu under the Settings menu, pop-up page shown in Figure 3-93.

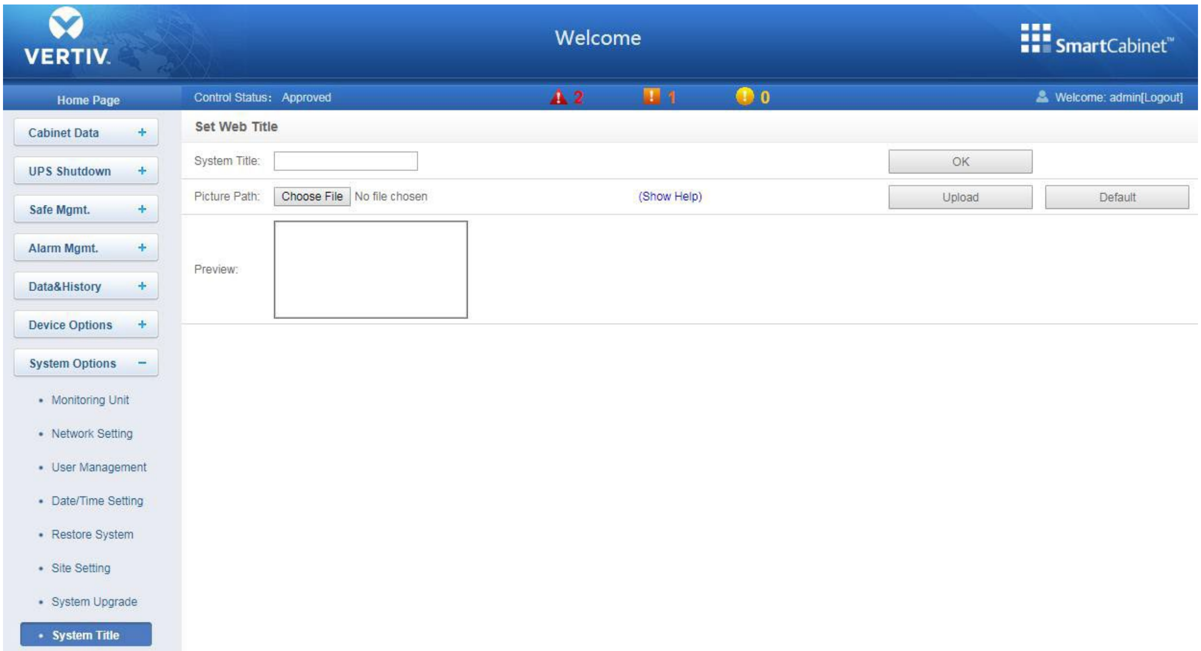

VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
2
1
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
Monitoring Unit
Network Setting
User Management
Date/Time Setting
Restore System
Site Setting
System Upgrade
System Title
Set Web Title
System Title:
OK
Picture Path:
Choose File
No file chosen
(Show Help)
Upload
Default
Preview:

Figure 3-93 Title setting

In the page shown in Figure 3-93, image/logo on the top right of the page can be replaced by clicking the Choose File button and select the desired upload Logo picture, then click the Upload button to upload the file to the intelligent monitoring system. Only [.gif] or [.bmp] or [.jpg] format picture are allowed to be uploaded to intelligent monitoring system, and the image size must be less than 500K. Click the Restore Default button to restore the default picture Logo.

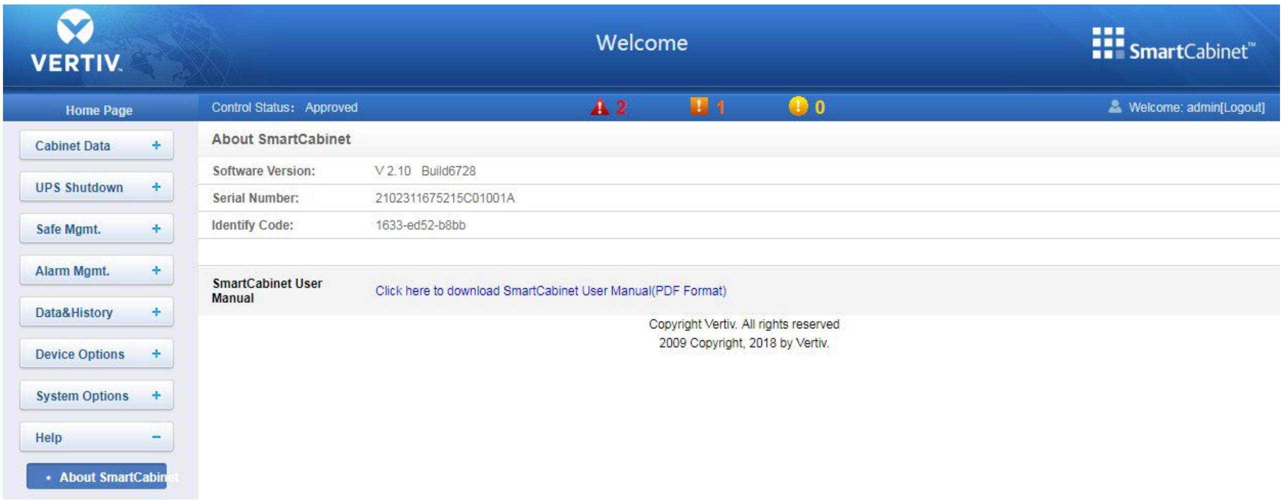
Users can also modify the system just above the title of the page. In the system title text box to enter a custom title system, click the OK button to confirm.

3.4.15 Help information

In the intelligent monitoring system home page, click on the help menu on the left, showing a sub-menu, namely: on SmartCabinet 2-P.

- About SmartCabinet 2-P

About SmartCabinet 2-P page displays intelligent monitoring system software version, serial number, signature and other information, and provide a user manual download link, as shown in Figure 3-94.



About SmartCabinet

Software Version:	V 2.10 Build6728
Serial Number:	210231167521 5C01001A
Identify Code:	1633-ed52-b8bb
SmartCabinet User Manual	Click here to download SmartCabinet User Manual(PDF Format)

Copyright Vertiv. All rights reserved
2009 Copyright, 2018 by Vertiv.

Figure 3-94 About Intelligent Monitoring System

3.5 APP

RDU Monitor APP by receiving monitoring data from RDU series surveillance products, remote monitoring of the status of UPS, air conditioning, power distribution equipment, access control, temperature, flooding and other equipment and alarm information. While providing the main monitor browsing features, including: real-time alarms, status data, historical data, alarm confirmation.

3.5.1 The client operating environment

- Software Requirements

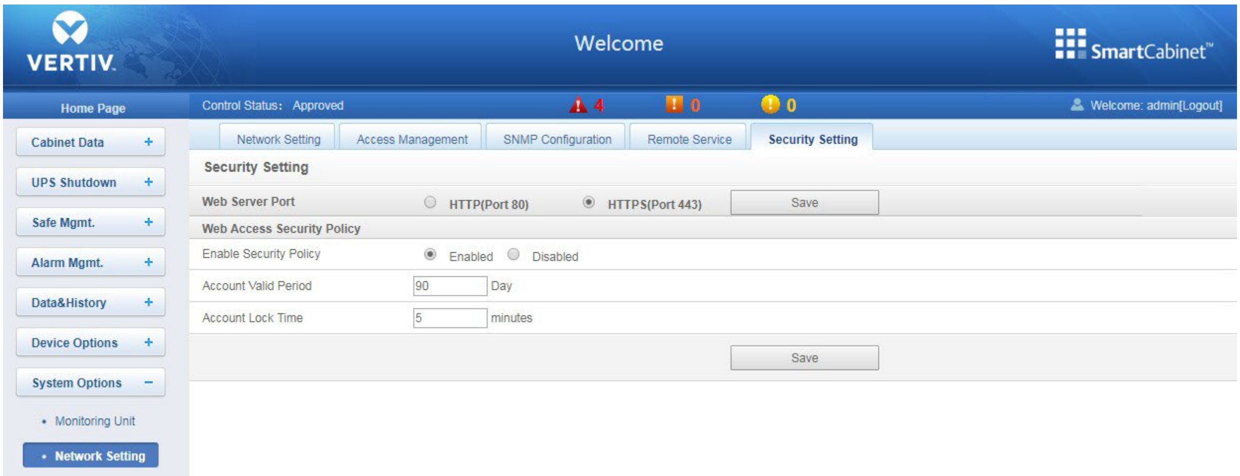
  Operating System: android, IOS

- Network Requirements

  Wireless access

3.5.2 RDU Monitor APP system settings

- *User to download RDU Monitor APP (recommended platform: 360 Mobile Assistant application treasure, Baidu Mobile Assistant, Google Play, App Store, etc.), and install it.*
- *The whole system and user APP LAN access users.*
- *Ensure RDU Monitor APP assigned network address and local LCD display network addresses can communicate.*
- *Confirm Smart Cabinet 2-P Web access using the HTTPS protocol. Click to modify the way the system is set to enter the network settings, select Security Settings. Check HTTPS (433 port), as shown in* Figure 3-95.


VERTIV
Welcome
SmartCabinet™
Home Page
Control Status: Approved
4
0
0
Welcome: admin[Logout]
Cabinet Data +
UPS Shutdown +
Safe Mgmt. +
Alarm Mgmt. +
Data&History +
Device Options +
System Options −
• Monitoring Unit
• Network Setting
Network Setting
Access Management
SNMP Configuration
Remote Service
Security Setting
Save
Save

Security Setting

Web Server Port ○ HTTP(Port 80) ● HTTPS(Port 443)

Web Access Security Policy

Enable Security Policy ● Enabled ○ Disabled

Account Valid Period 90 Day

Account Lock Time 5 minutes

Figure 3-95 APP instructions

- RDU Monitor APP use

1. Open APP, interface shown in Figure 3-96.

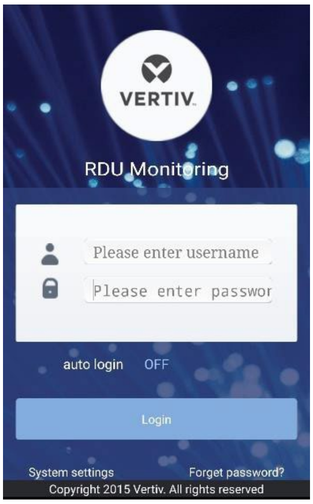
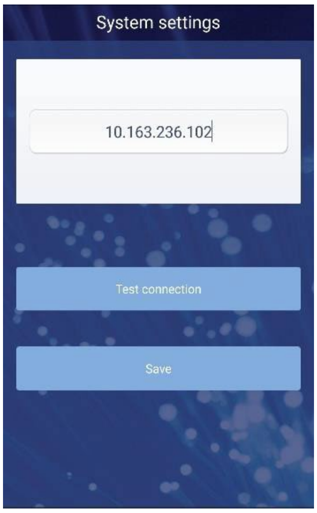

VERTIV
RDU Monitoring
Please enter username
Please enter passwor
auto login OFF
Login
System settings
Forget password?
Copyright 2015 Vertiv. All rights reserved

Figure 3-96 User Interface

2. Click the System Settings button to enter the system interface, as shown in Figure 3-97.

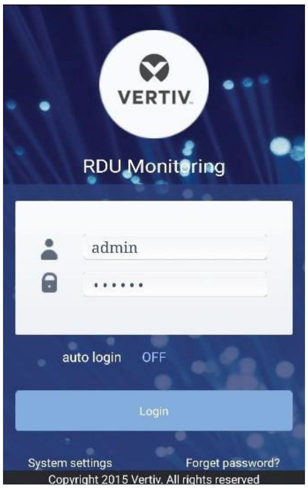
At the prompt screen, enter the server address, and test the connection, save server address after the connection is successfully tested.


System settings
Test connection
Save

10.163.236.102

Figure 3-97 Server Address Settings page

3. After this step is completed the operation, RDU Monitor APP has completed configuration and back-end system functions. Return to the login screen to log operations. The same username and password required to log in with a user name and password back-end systems. Figure 3- shown in FIG. After entering a user name and password, click Login button to log in operation. Login interface, can choose to automatically log (Y / N), as is the choice, this after a successful login, the next user name input without passwords, login operation.


VERTIV.
RDU Monitoring
Login
System settings
Forget password?
Copyright 2015 Vertiv. All rights reserved

admin

••••••

auto login OFF

Figure 3-98 login interface

4. RDU Monitor APP into the interface, as shown in Figure 3- Interface includes: Overview, concern, alarm, monitoring, and more (account management, language settings, server settings, synchronization site equipment and on the application). For details, see RDU Monitor APP operating manual.

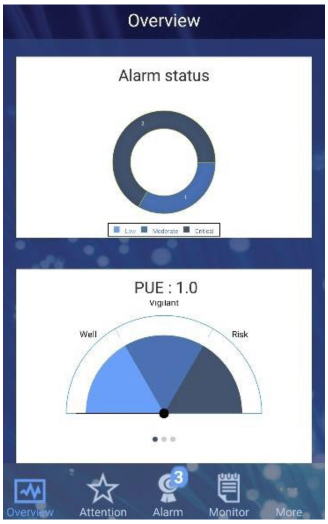

Overview
Alarm status
Low
Moderate
Critical
PUE : 1.0
Vigilant
Well
Risk
Overview
Attention
3
Alarm
Monitor
More

Figure 3-99 Interface Overview

4 General Maintenance

This chapter describes the maintenance SmartCabinet 2-P products, including

- Safety Instructions
- Maintenance of Main components
- General Troubleshooting
- FAQs for the MSC Intelligent monitoring card

4.1 Safety Guidelines

- *Before perfoming maintenance activities disconnect the power input, power off the device, unless the maintenance activity necessarily demands a power supply.*
- *System Maintenance must be completed by trained licensed professional and technical personnel*
- *All maintenance operations must be strictly in accordance with local code enforcement, in particular in accordance with the relevant terms of power, cooling and production regulations.*
- *Subject to the provisions of the manufacturers maintenance, otherwise no warranty.*
- *Ignoring safety guidance to human life and the environment at risk.*
- *Inappropriate parts can lead to reduced performance or equipment downtime, meaning recommended use-dimensional technology original parts.*

4.2 The main component maintenance

- *To ensure the normal operation of equipment must be checked regularly for routine maintenance.*

4.3 Intelligent monitoring unit maintenance

4.3.1 Restore Default Settings

To restore the default settings can be done through software and hardware in two ways.

Recovery software system settings to the default one in.

Hardware recovery Including the restoration of intelligent surveillance system administrator password (the default user name: Vertiv: admin, password) and the IP address of the intelligent monitoring system (default IP address is 10.163.263.82).

4.3.2 Common Problem

Question 1: Under normal circumstances intelligent monitoring unit communication, intelligent monitoring unit login page Why no?

A: The emergence of these problems, there are three solutions:

Step One: Make sure the IP address is correct.

Make sure the cable connection is correct.

The default IP address of the intelligent monitoring unit is 192.168.0.254.

Step Two: Make sure that the connectivity of IP addresses.

Confirm the IP address of communication may be used PING / ping command, as follows:

1) Click the bottom left corner⊞Icon, 🔍Input box "cmd", shown in Figure 4-1.

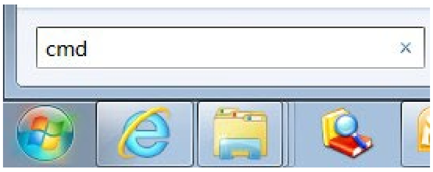
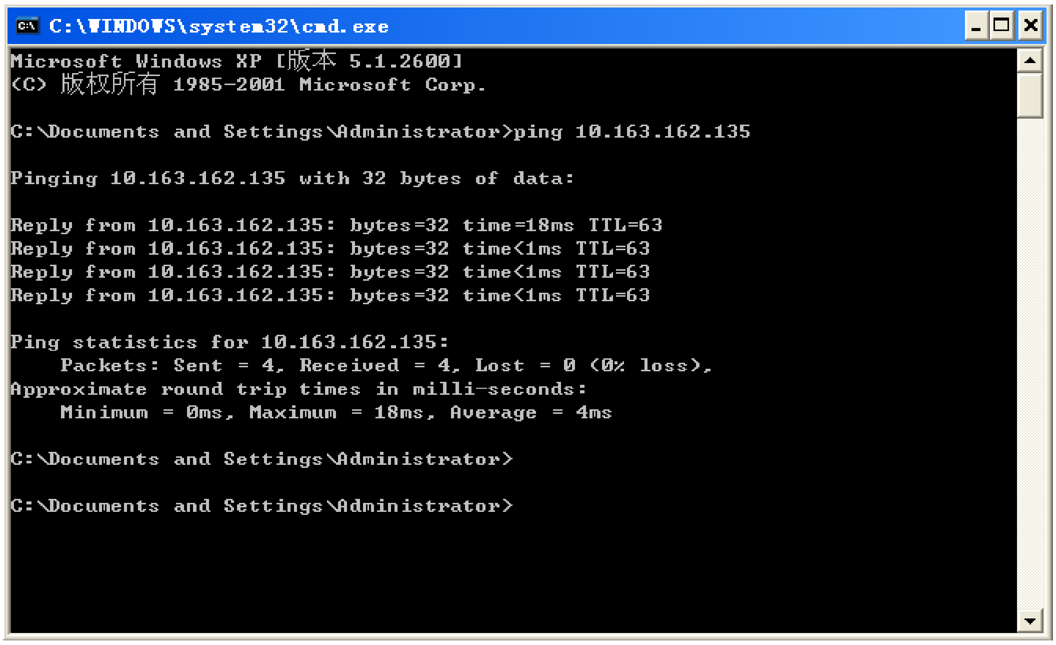


Figure 4-1 Enter “CMD

2) Press the ENTER key, the pop-up page as shown in Figure 4-2. At the command line, type "ping" and the IP address (eg ping 10.163.162.135) to see if the communication was successful.



```
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 10.163.162.135

Pinging 10.163.162.135 with 32 bytes of data:

Reply from 10.163.162.135: bytes=32 time=18ms TTL=63
Reply from 10.163.162.135: bytes=32 time<1ms TTL=63
Reply from 10.163.162.135: bytes=32 time<1ms TTL=63
Reply from 10.163.162.135: bytes=32 time<1ms TTL=63

Ping statistics for 10.163.162.135:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 18ms, Average = 4ms

C:\Documents and Settings\Administrator>

C:\Documents and Settings\Administrator>
```

Figure 4-2 Enter

Step Three: See 3.4 Log intelligent monitoring unit to complete the related operations.

Question 2: The user has selected the deep blue theme, but when browsing the Web interface smart monitoring unit, the page is still clear and blue theme, how to deal with?

A: Click the [current user] logout button to return to the login screen, click on■Select the icon deep blue theme, you can log back into the system.

Question 3: After the alarm is generated, does not receive mail, or SMS notification, or an alarm in the case is not over, e-mail or SMS notification fewer than 3, how to deal with?

A: Follow these steps to troubleshoot:

1) Check the SMS module and the mail server is configured correctly, see 3.4.8 Alarm Notification alarm management configuration;

2) If the message is not received notification, please confirm whether phone card arrears down;

3) If you do not receive mail notification, tap Menu Data Management -> log data, query alarm notification whether to send the log record to send mail failure. If so, it means that the network is busy or mail server communication is busy.

Question 4: How will multiple SmartCabinet 2-P network, centralized monitoring of the total?

A: SmartCabinet 2-P dimension Di supporting access technology RDU-M centralized monitoring platform, the network communication, the upper layer may RDU-M, to be monitored by a simple setting SmartCabinet 2-P. Multiple networking SmartCabinet 2-P Figure 4-3.

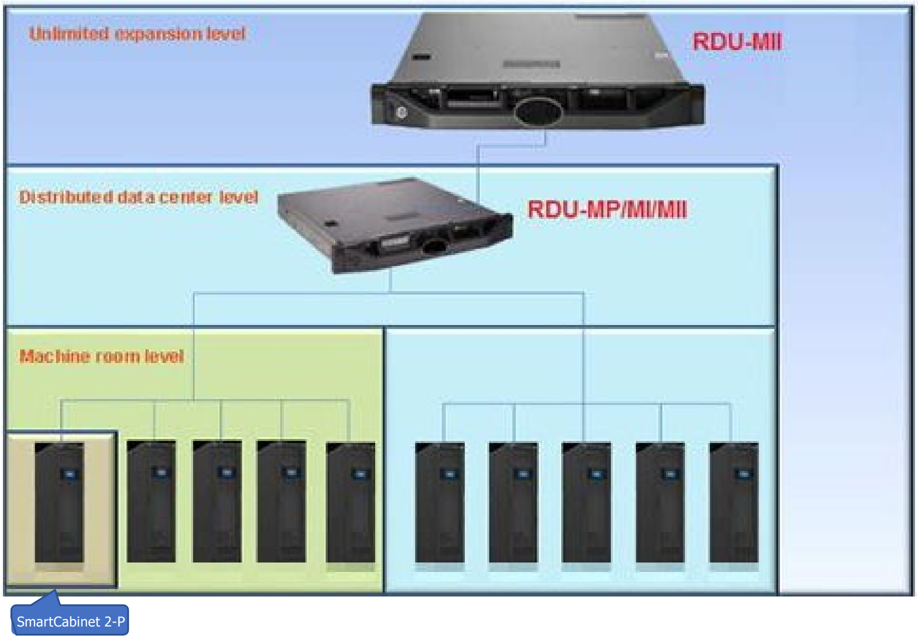


Figure 4-3 Network Topology FIG SmartCabinet 2-P

4.4 Air-conditioning system maintenance

Air-conditioning system maintenance including electrical inspection, maintenance of indoor and outdoor machine maintenance and maintenance inspection checklist and other content.

- *Prior to any maintenance activity, open the circuit breaker, power off the device, unless the maintenance activity necessarily demands a power supply.*

4.4.1 Electrical Inspection

Control panel, the temperature sensor should visual inspection every six months, to determine whether or loose electrical connections, presence or absence of circuit corrosion.

Maintenance check one by one by the following:

1) carry out the whole electrical insulation test, failed to find contacts and do the processing.

2) electrical contacts are tightened.

3) the compressed air and electrical control components with a brush to remove dust or dried.

- *All are non-hot plug circuit board. Hot plug will have a great inrush current, it may cause irreparable damage to the circuit. All control panel for maintenance must be carried out after the microprocessor controller is powered down.*

4.4.2 Indoor maintenance

- Evaporator EC Fans

The fan assembly work features for 24-hour continuous operation, should be excluded for any abnormal airflow obstruction factors, to avoid air flow to reduce harm to the refrigeration systems and other system components.

- Condensate Drain

In order to ensure the normal operation of drainage, need regular testing water tray. Make sure the drain is no crushing debris, no leakage.

4.4.3 Outdoor maintenance

- Cooling System

  Monthly cope with the refrigeration system components to conduct a comprehensive inspection, and found that the phenomenon of abnormal operation. Refrigerant piping should be fixed firmly, the vibration can not follow the frame walls, floors or device. Checked every six months refrigerant lines for wear.

- Air-cooled condenser

  When the outdoor air flow is hindered, fins with compressed air or cleaning agents (weak alkaline) washing the condenser, the air flow obstruction removed dust debris. When compressed air cleaning fins, purge gas flow direction should be an inverse direction. Winter to avoid the snow accumulation around to the condenser. Check that the fins have a rewind or damage to the phenomenon, if necessary simple repairs. Check that all refrigerant circuit and vibrating the capillary tubing, reinforced if necessary. Carefully inspect all refrigerant lines, accessories for traces of oil, to determine the location of the leak.

- Compressor

  Compressor failure generally divided into two categories:

  Motor failure (e.g., coil burning, dielectric breakdown, interwindings short circuit).

  Mechanical failure (e.g. compressor failure, expansion valve failure, evaporator fan failure, etc.).

  If the operating pressure can not be established, it indicates compressor failure. After starting the suction pressure and discharge pressure to maintain equilibrium, remove the cause and the inversion of the compressor can be determined as a failure.

  The air conditioner has a strong set of control system alarm function and protection features to ensure safe operation of the compressor. In the periodic maintenance and inspection process, the maintenance personnel should record the high and low pressure values and promptly determine the cause of the fault alarm protection.

  - *Avoid direct skin contact with the remnants of the gas compressor systems and lubricants. When handling contaminated member with a long rubber gloves.*
  - *For the refrigerant remaining in the system, before servicing it should be recovered by standard recovery. The refrigerant discharged into the air cause environmental pollution. Refrigerant emissions must comply with state and local laws and regulations.*

- Maintenance inspection checklist

  - *To ensure the normal operation of equipment must be checked regularly for routine maintenance.*

Table 4-1 Maintenance Checklist

SmartCabinet 2-P air conditioning			
date:		v'vd:	
Equipment Type:		Serial number:	
classification	Object Maintenance	Check item	Whether maintenance
Month maintenance project	Indoor unit filters	Check if the filter is damaged, clogged	
		Clean the filter	
	Indoor fan	Whether the fan running smoothly, with or without abnormal noise	

	Supply air temperature sensor	Supply air temperature sensor firmly binding, and correct the detected temperature	
	Outdoor fan	Whether the fan running smoothly, with or without abnormal noise	
	Outdoor compressor	Listen to the sound operation, observe unit operation shock case	
Maintenance items every six months	Indoor fan	Whether the fan running smoothly, with or without abnormal noise	
		Check and circuit connectors secured	
	Supply air temperature sensor	Supply air temperature sensor firmly binding, and correct the detected temperature	
	Cooling System	Suction pressure	
		Exhaust pressure	
		Suction superheat	
		Check the indoor unit pipe thread connection is securely connected	
		Check the system for leaks	
	The outdoor unit	Clean the condenser	
		Whether the fan running smoothly, with or without abnormal noise	
		Outdoor fan motor is mounted securely	
		Listen to the sound operation, observe unit operation shock case	
		Check and circuit connectors secured	
	Circuit board	Check circuit connecting joint	
		Check the plate surface for corrosion	
Remarks:			
Signature:			

4.4.4 UPS power distribution system maintenance

- Fan Maintenance

Under continuous operation, the expected working time UPS fan 20,000 hours to 40,000 hours. The higher the temperature, the shorter the life of the fan.

UPS operation, should be regularly checked every six months all fans are operating properly, make sure the wind blown from the rear panel vents UPS.

- Check the UPS status

  Regular cleaning of UPS, in particular ventilation holes, to ensure the free flow of air flow in the chassis, using a vacuum cleaner to clean it if necessary. UPS sure there are no obstructing ventilation.

UPS is recommended once every six months to check the working status.

Check the contents include:

1. Check the UPS without fault. Fault light is on, if there is a fault alarm.

2. Check that the UPS is operating in bypass. Normally, UPS should operate in a normal mode; if the UPS is operating in bypass mode, find out the reason, such as: human action, overload, internal fault and the like.

3. Check whether the battery is in a discharge state. Mains Under normal circumstances, the battery should not be discharged; if the UPS is operating in battery mode, find out the reason, such as: mains failure, the battery test, operator intervention, and the like.

4.5 Break down and Disposition

SmartCabinet 2-P has substances and components (electronic elements) which may be harmful to the environment. Therefore, if the product life has reached the last stage, it must be disassembled by professional and qualified technicians. Vertiv recommends that the SmartCabinet 2-P system must be sent to the Special harmful substance handling center. Check for local regulations and protocols for the disposal process.

4.6 Safety Instructions

Following are the safety instructions that need to be observed during the maintenance process:

- *Switch off the power input during the equipment maintenance. Switch off the equipment power unless the testing devices need power.*
- *Only authorized personnel and technicians are allowed to maintain the system.*
- *All maintenance and operation must follow the local laws, especially the regulations about the electric power, refrigeration, and production.*
- *Comply with the manufacturer's instructions before and during maintenance., Failure to observe this will result in the warranty becoming void.*
- *Adherence to the safety instructions is mandatory to ensure personnel safety and prevent any environmental spoilage apart from equipment damage.*
- *Unsuitable components will lead to hindrance in the performance of the equipment and even equipment shutdown. Therefore, Vertiv recommends the use of Vertiv OEM or Vertiv-approved components.*

4.6.1 Troubleshooting

Through the intelligent monitoring system of operating data and alarm information, possible causes and corrective actions for the error and Table 4-2.

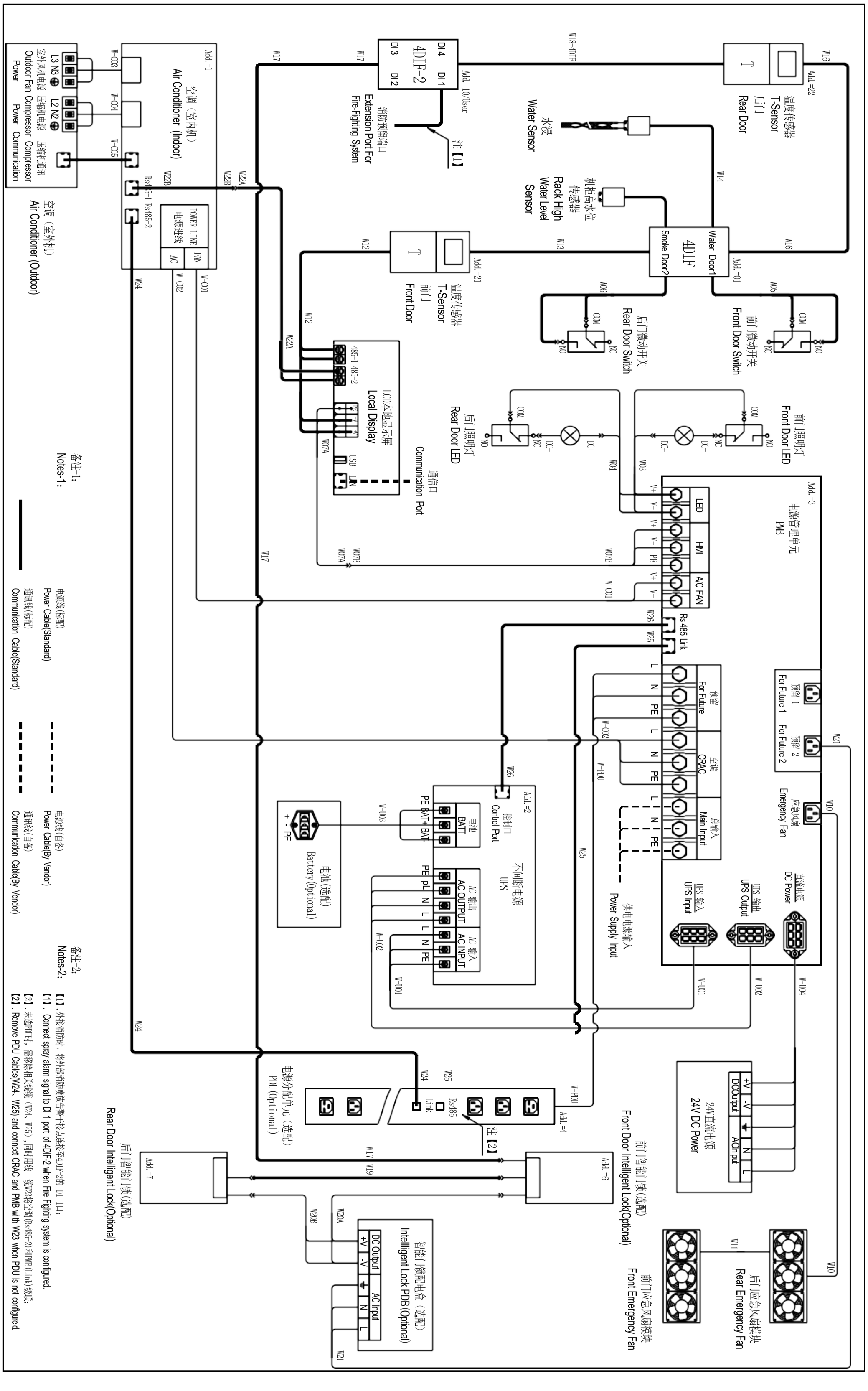
Table 4-2 Troubleshooting

Symptom	Possible Causes	Measures
Environmental amount of high-temperature alarm	Alarm temperature value set unreasonable	Check and adjust the temperature of each temperature sensor front door alarm value
	Overload	See if the actual maximum thermal load exceeds the rating
	The fan is not operating properly	Check the fan open space is closed
	Fan failure	Call dimensional meaning technical service hotline: 4008876510
	Air conditioning and refrigeration output failure	Call dimensional meaning technical service hotline
	Closed door is not securely closed	Check each closure door closed and
Uneven temperature	Closed channel region hindered	Check the channel area is enclosed equipment, cables hinder
	User equipment installation uneven	Referring to the respective user manual adjustment required to load balancing cabinet
	Volatility short term load	See if there is a large range of actual load fluctuations
Door state sensor alarm	Closed door is not securely closed	Check each closure door closed and
	Magnetic sensor mounted bad or damaged	Re-adjust the mounting clearance or call technical service hotline dimensional meaning
Belt water sensor alarm	Water enters the detection region with	There is room to check leakage point
	Air conditioning condensate leaks	Check condensate line connection is reliable
Fans can not start	The fan is not operating properly	Check the fan open space is closed
	Fan failure	Call dimensional meaning technical service hotline
Air conditioning high pressure alarm	Insufficient air volume air conditioning condensate	Removal of impurities coil or near the surface of the air inlet; check the voltage of the fan in the outdoor unit.
	Air-conditioning condenser fan does not turn	Check the voltage of the fan in the outdoor unit.; Check condensing pressure sensor is normal
Low pressure alarm	Refrigerant leakage	Find the leak, adding refrigerant
	Outdoor ambient temperature is too low	Call dimensional meaning technical service hotline
	Outdoor fan is still running at full speed at low outdoor ambient temperatures	Check the voltage of the fan in the outdoor unit.; Check condensing pressure sensor is connected to the fan speed controller are loose
High temperature alarm	Temperature alarm setting unreasonably	Reset alarm temperature
	More than the load	Check the actual heating power cabinet units

Low temperature alarm	Low temperature alarm setpoint unreasonable	Re-set low temperature alarm

4.7 Power Distribution Schematic system

SmartCabinet 2-P system distribution diagram, as shown below


Add.=22
温度传感器
T-Sensor
后门
Rear Door
W16
W14
W18~4DIF
水浸
Water Sensor
机柜高水位
传感器
Rack High
Water Level
Sensor
Add.=01
Water Door1
4DIF
Smoke Door2
W13
W05
W06
COM
NO
NC
前门微动开关
Front Door Switch
后门微动开关
Rear Door Switch
前门照明灯
Front Door LED
后门照明灯
Rear Door LED
DC+
DC-
W03
W04
Add.=10/User
DI 4
DI 1
4DIF-2
DI 3
DI 2
注【1】
消防预留端口
Extension Port For
Fire-Fighting System
W17
Add.=21
温度传感器
T-Sensor
前门
Front Door
W12
通信口
Communication Port
LCD本地显示屏
Local Display
485-1
485-2
USB
LIN
W07A
W07B
W22A
W22B
Add.=3
电源管理单元
PMB
LED
HMI
A/C FAN
V+
V-
PE
W-C01
W-C02
Rs 485 Link
W26
W25
预留 1
For Future 1
预留 2
For Future 2
应急风扇
Emergency Fan
预留
For Future
空调
CRAC
总输入
Main Input
L
N
PE
直流电源
DC Power
UPS 输出
UPS Output
UPS 输入
UPS Input
W-U04
W-U02
W-U01
W-PDU
W21
W10
W11
供电电源输入
Power Supply Input
+V
-V
DCOutput
ACInput
24V直流电源
24V DC Power
后门应急风扇模块
Rear Emergency Fan
前门应急风扇模块
Front Emergency Fan
前门智能门锁(选配)
Front Door Intelligent Lock(Optional)
Add.=6
Add.=2
不间断电源
UPS
控制口
Control Port
电池
BATT
AC 输出
AC OUTPUT
AC 输入
AC INPUT
PE
BAT+
BAT-
pL
W-U03
电池(选配)
Battery(Optional)
+
-
Add.=4
注【2】
Rs485
Link
W24
电源分配单元（选配）
PDU(Optional)
W19
智能门锁配电盒（选配）
Intelligent Lock PDB(Optional)
DC Output
AC Input
W20A
W20B
Add.=7
后门智能门锁(选配)
Rear Door Intelligent Lock(Optional)
Add.=1
空调（室内机）
Air Conditioner (Indoor)
POWER LINE
电源进线
FAN
AC
Rs485-1
Rs485-2
W-C03
W-C04
W-C05
L3 N3
L2 N2
室外风机电源
Outdoor Fan Power
压缩机电源
Compressor Power
压缩机通讯
Compressor Communication
空调（室外机）
Air Conditioner (Outdoor)

备注-1:
Notes-1:

————	电源线(标配) Power Cable(Standard)	- - - - - -	电源线(自备) Power Cable(By Vendor)
━━━━	通讯线(标配) Communication Cable(Standard)	■ ■ ■ ■	通讯线(自备) Communication Cable(By Vendor)

备注-2:
Notes-2:

【1】. 外接消防时，将外部消防喷放告警干接点连接至4DIF-2的 DI 1口；

【1】. Connect spray alarm signal to DI 1 port of 4DIF-2 when Fire Fighting system is configured.

【2】. 未选PDU时，需移除相关线缆（W24、W25），同时用线 揽W23将空调(Rs485-2)和PMB(Link)级联；

【2】. Remove PDU Cables(W24、W25) and connect CRAC and PMB with W23 when PDU is not configured.

4.8 PMB Introduction

4.8.1 PMB Features

PMB is a power management unit, especially designed for Smart Cabinet 2-P designed for use with a side-mounted power supply and distribution unit, shown in Figure 1. PMB addition to having distribution functions, but also for voltage, current, active power, power factor, power, load monitoring percent; and has a function of managing an output port off. PMB can be performed by the serial communication with the upper management apparatus, the relevant measurement data uploaded so that a user can remotely manage PMB.

4.8.2 Relay control

PMB has an output port 16, the relay 16 (relay and an output port correspondence), power supply ports for controlling each breaking. When the relay is engaged, the corresponding output port charged. May be provided relay operating time (0 to 120 seconds) according to the needs of users, or pull off the output power port.

4.8.3 Digital, key display module

The three-digit eight-segment digital tube can display the current (Current), voltage (Voltage) and PMB address (ID), and can also modify the PMB address by pressing the button; according to the display state of current and voltage on the digital tube, three LED indications The lights indicate different states. The relationship between the LED indicator and the digital tube display status is shown in Table 4.3.

Table 4-3 LED status

Part Name	Features
Current Indicator	Solid green: current parameters operating normally, three digital display of the current value of the current
	Solid red: alarm current operation parameters, three digital display alarm current
	Flashing red: alarm current parameter run, three digital display instead of current values
Voltage Indicator	Solid green: normal operation voltage parameters, three digital display of the current value of the voltage
	Solid red: voltage alarm operation parameters, three digital display warning voltage value
	Flashing red: alarm current operating parameters, three voltage values than digital display
ID indicator	Solid green: normal address parameters, three digital display of the current value of the address ID

4.8.4 PMB Tool

- *PMB contains lightning protection module, the system on the power to check the lightning protection of the open state, to ensure that the PMB (SPD) open-air Closed.*
- *Ensure that the maintenance bypass switch is disconnected before the system is powered on, and that it is locked by the sheet girding.*

PMB Boot sequence:

1. Close the total input after the power indicator light is on.

2. To confirm that no problem after the closure of the UPS input blank and lightning protection of the empty open.

3. When the UPS starts and turns off the UPS output, the reserved socket begins to supply the power.

4. Closed air-conditioning open, air-conditioning start.

5. Closed Socket open, empty the DC output is open and Empty.

The PMB completes the Boot.

4.8.5 PMB Maintenance Bypass

PMB has a maintenance bypass open, using the following procedure to switch the load from the inverter output to repair bypass mode, The operation flow is as Follows:

1. UPS Cut-to-bypass mode, can be manually operated UPS into bypass mode, can also set dry contact for maintenance mode, through the dry contact signal into the bypass mode.

2. Remove and maintain bypass blank retaining screws to remove the blanks.

3. Closed Maintenance Bypass Empty Open.

⚠ *Check that the UPS is working in bypass mode before closing the maintenance bypass air open.*

4. Turn off UPS inverter output.

5. Disconnect the UPS input and output from the open space.

6. After the UPS completely power down for demolition and maintenance.

7. Load the UPS back into the rack when maintenance is complete.

8. Closed UPS input NULL open.

9. Turn on UPS inverter output after UPS startup.

10. UPS Switch to bypass mode.

11. Closed UPS output NULL Open.

⚠ Make sure the UPS is working in bypass mode before closing UPS output is empty.

12. Disconnect Maintenance Bypass NULL Open

13. Install the maintenance bypass Blank-open blank.

14. UPS switch to inverter mode to complete maintenance operation.

4.8.6 PMB Shutdown

PMB shutdown sequence:

1. Ensure that all users it equipment is completely powered off, disconnect the PMB socket open

2. Turn off the air conditioning, after the air conditioning stop conveying cold wind, disconnect PMB air-conditioning empty open

3. Long press the UPS shutdown key, turn off the ups, after shutting down, disconnect the PMB ups input and output blank

4. When the UPS is completely down, disconnect the total input of the pmb

5. Check that all electrical equipment is completely powered

6. The PMB completes the Shutdown.

4.8.7 Circuit Breaker Protection characteristics

PMB uses a variety of different capacity of the empty open, when the load continuous current exceeds the rated input value of empty open, empty meeting trip Protection.

After the open trip protection, please check the tripping reason, after troubleshooting, then open the empty closed.

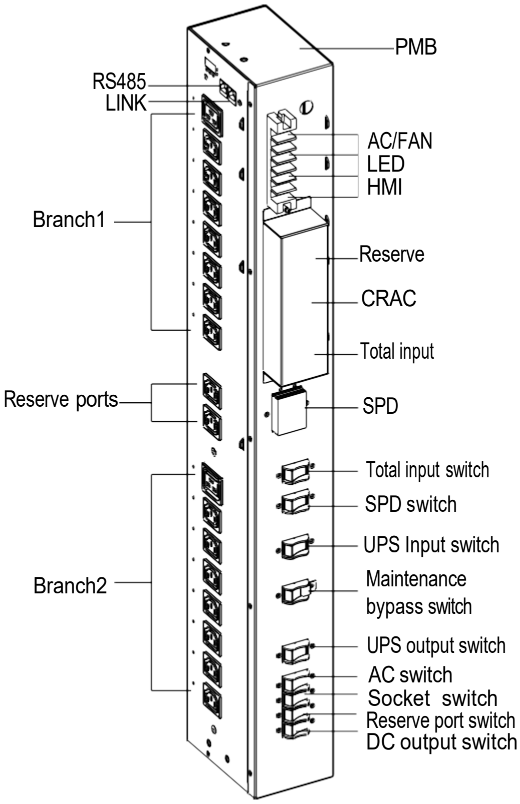
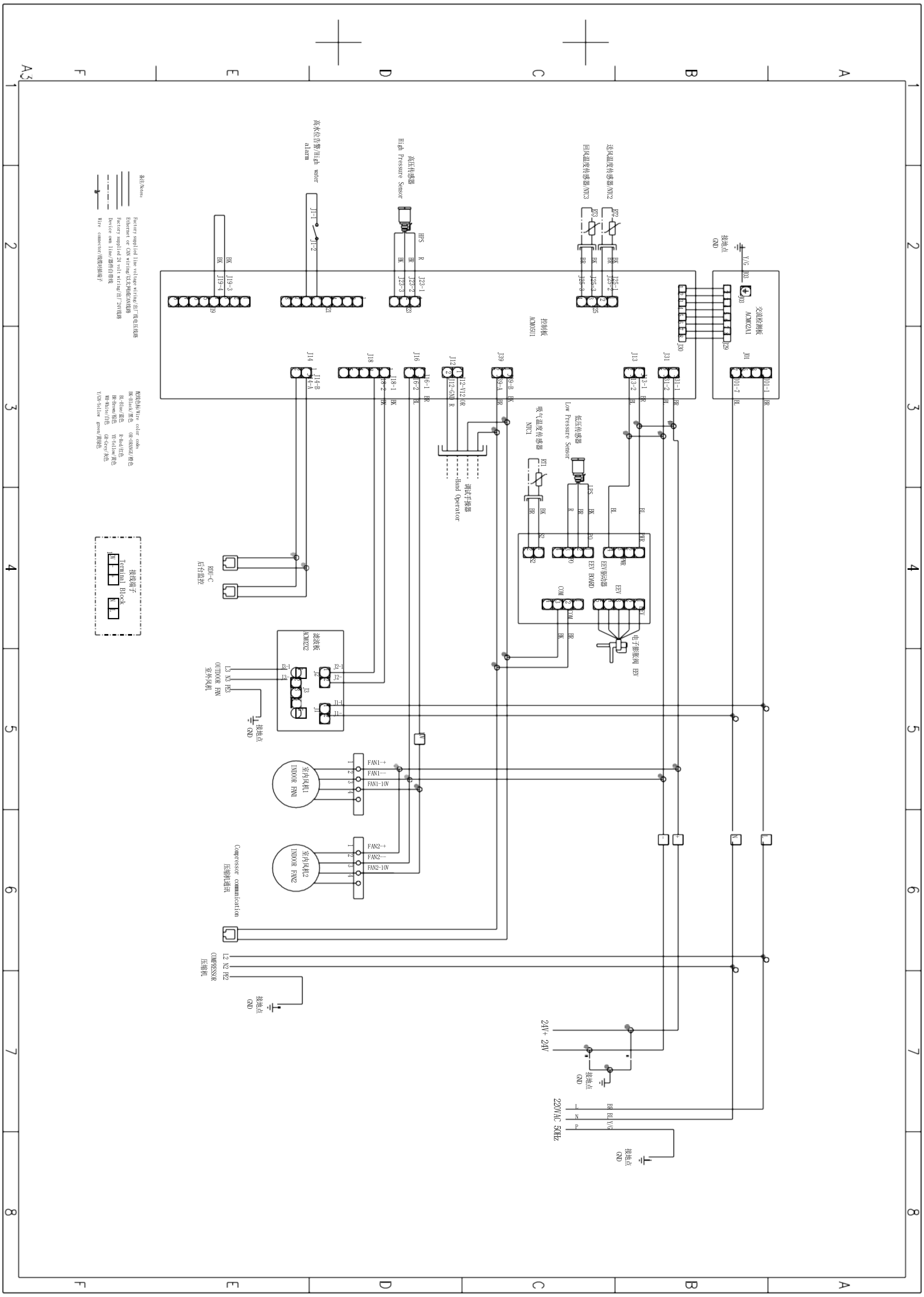

PMB
RS485
LINK
AC/FAN
LED
HMI
Branch1
Reserve
CRAC
Total input
Reserve ports
SPD
Total input switch
SPD switch
UPS Input switch
Branch2
Maintenance bypass switch
UPS output switch
AC switch
Socket switch
Reserve port switch
DC output switch

Figure 4-4 PMB Structure

4.9 Schematic Diagrams of AC

AC system distribution diagram, as shown below.



交流检测板 ACM02A1
控制板 ACM05U1
送风温度传感器/NTC2
回风温度传感器/NTC3
低压传感器 Low Pressure Sensor
吸气温度传感器 NTC1
电子膨胀阀 EEV
EEV驱动器 EEV BOARD
调试手操器 Hand Operator
高压传感器 High Pressure Sensor
高水位告警/High water alarm
滤波板 ACM02X2
室内风机1 INDOOR FAN1
室内风机2 INDOOR FAN2
RDU-C 后台监控
L3 N3 PE3 OUTDOOR FAN 室外风机
Compressor communication 压缩机通讯
L2 N2 PE2 COMPRESSOR 压缩机
24V+ 24V
220VAC 50Hz
接地点 GND
接线端子 Terminal Block
备注/Notes:
Factory supplied line voltage wiring/出厂线电压线路
Ethernet or CAN wiring/以太网或CAN线路
Factory supplied 24 volt wiring/出厂24V线路
Device own line/器件自带线
Wire connector/线缆对插端子
配线色标/Wire color code
BK-Black/黑色
OR-ORANGE/橙色
BL-Blue/蓝色
R-Red/红色
BR-Brown/棕色
YE-Yellow/黄色
WH-White/白色
GR-Grey/灰色
Y/GN-Yellow green/黄绿色

Appendix – Toxic and Harmful Substances List

Parts	Hazardous Substances					
	Plumbum	Hydrargyrum	Cadmium	Chrome6+	PBB	PBDE
	Pb	Hg	Cd	Cr6＋	PBB	PBDE
SmartCabinet 2-P	○	○	○	○	○	○
○: Means the content of the hazardous substances in all the average quality materials of the part is within the limits specified in SJ/T-11363-2006; X: Means the content of the hazardous substances in at least one of the average quality materials of the part is outside the limits specified in SJ/T11363-2006.						
Vertiv Tech Co., Ltd. has been committed to the design and manufacturing of environment-friendly products. It will reduce and eventually eliminate the harzardous substances in the products through unremitting efforts in research.						
About Environment Protection Period: The Environment Protection Period of the product is marked on the product. Under normal working conditions and normal use of the products observing relevant safety precautions, the hazardous substances in the product will not seriously affect the environment, personnel safety or property in the Environment Protection Period starting from the manufacturing date.						
Application scope: Cabinet components 、Display screen、PDU、PMB、Cooling parts、Fan unit 、Electric control unit and Cables in SmartCabinet 2-P						

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