

INTELLIGENT IOT (OPERATION & MAINTENANCE) BOX



CATALOG



BACKGROUND



STRUCTURE INTRODUCTION



FUNCTION INTRODUCTION



APPLICATION



TECHNICAL SPECIFICATION



01

BACKGROUND



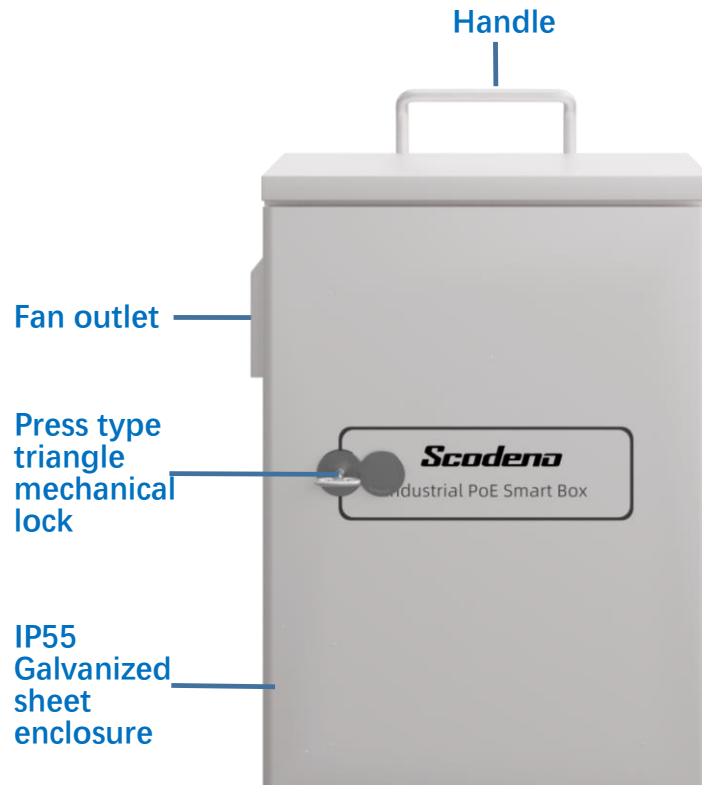
Scodeno IOT Box is intelligent operation and maintenance integrated to meet the management needs of big data informatization in safe cities, electronic police checkpoints, highways, rail transit and other fields. It is an intelligent operation and maintenance box that integrates power supply and distribution, optical fiber transmission A smart chassis that integrates access, lightning protection, environmental collection, intelligent monitoring, remote control and other functions.

Compared with traditional boxes, Scodeno IoT is highly integrated, has rich functions, is more intelligent, and is easy to maintain.

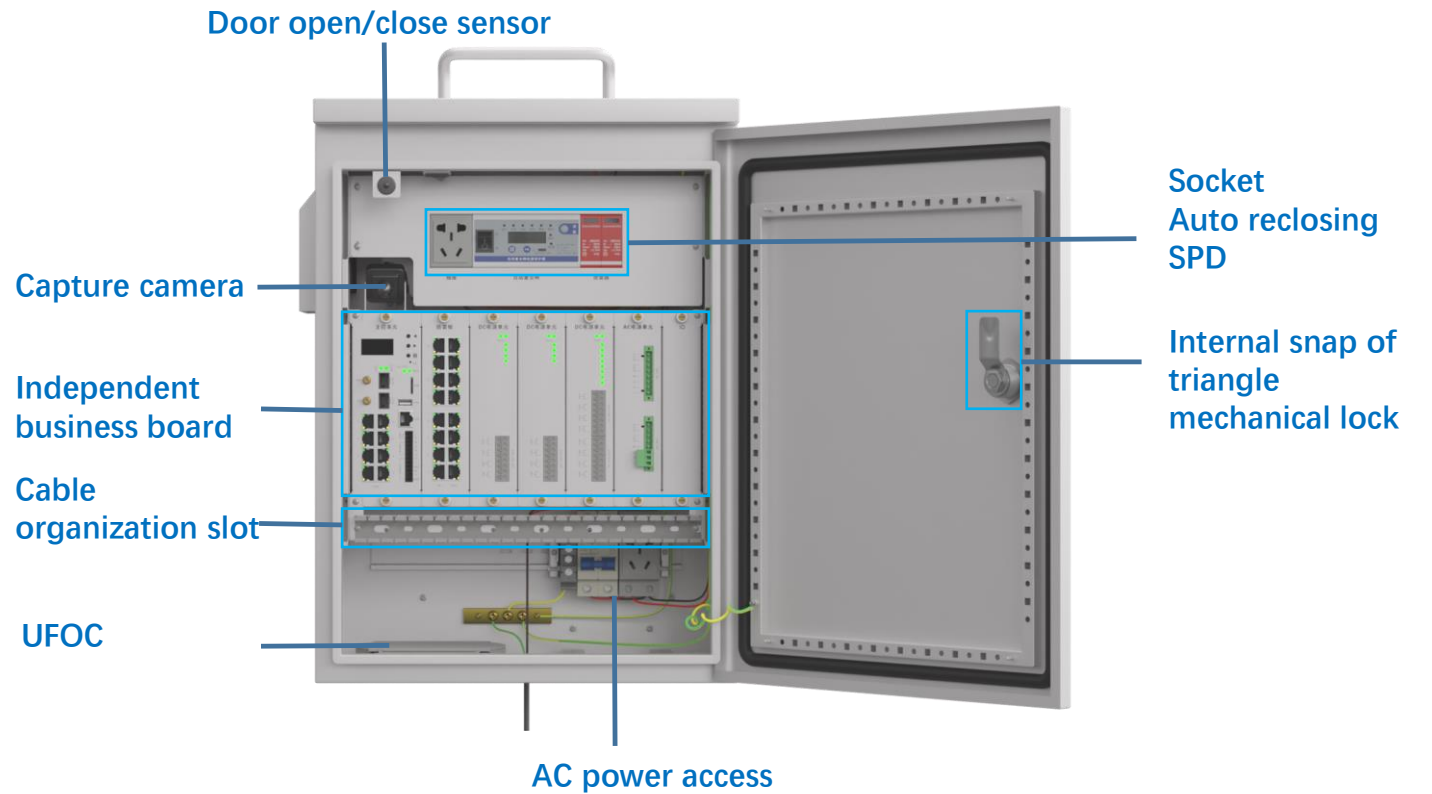
02

STRUCTURE

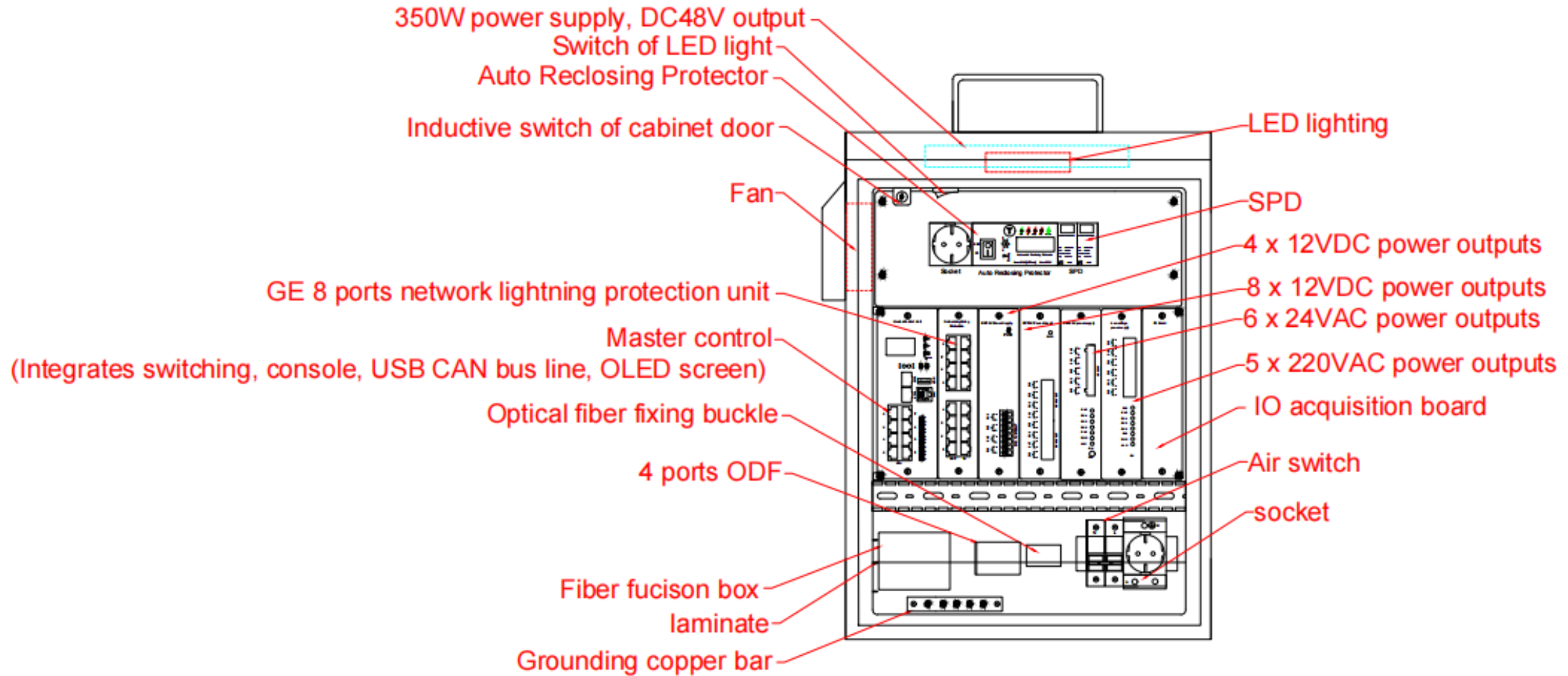
Outline Structure



Front View of Box
Door Opening



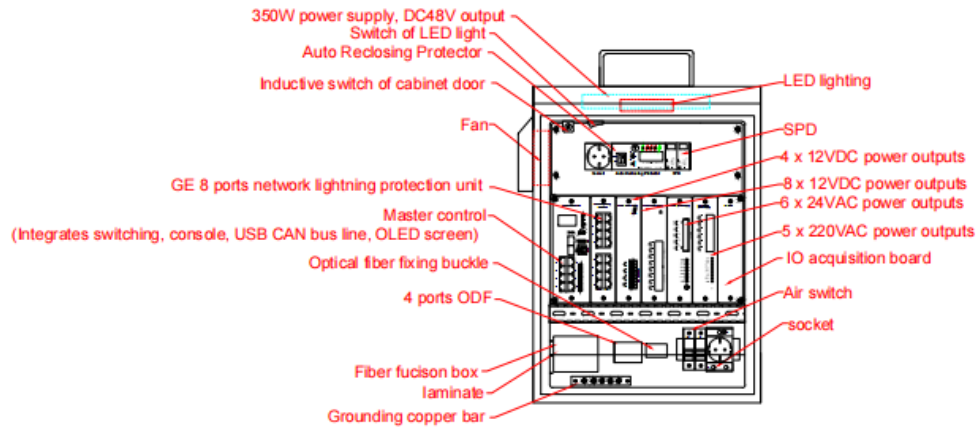
STRUCTURE INTRODUCTION



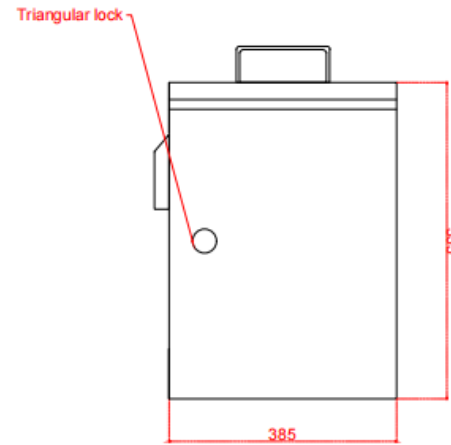
Front View (Sample)



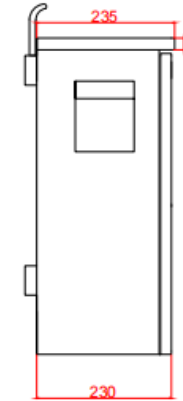
STRUCTURE INTRODUCTION



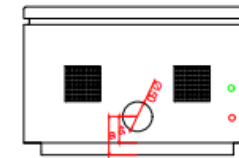
Front view



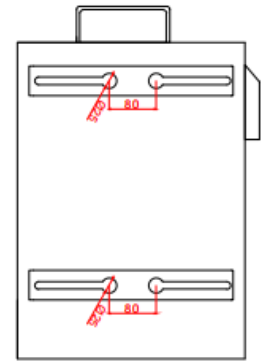
Front view



Front view



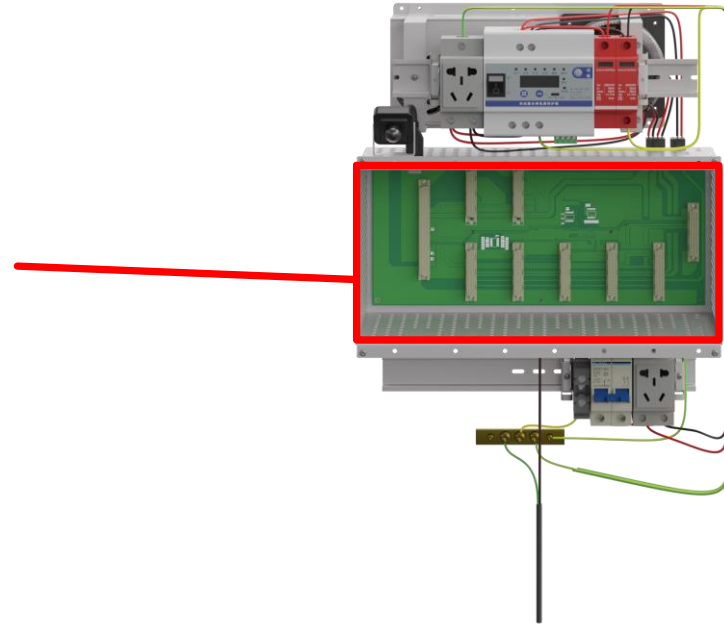
Front view



Front view

(Sample)

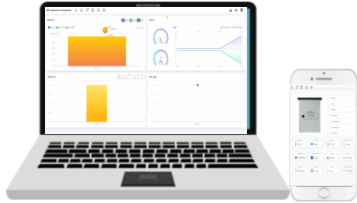
Backplane integrated design: All functional boards are connected to the backplane via plug-in access. Through the internal wiring design of the backplane, data intercommunication among all functional boards is achieved.



(Sample)

03

FUNCTION INTRODUCTION



Software Management

- Real-time monitor devices status
- Alarm pop up and devices checking
- Multi devices management
- Map location locking
- Work order management



Security

- AC & Network Lightning protection
- Leakage, over-voltage, short circuit protection
- Fool-proofing plug, wiring error proof
- IP55 proof, Multi layer paint protection



Communication Integration

- Managed Switching communication + GPS+
- WIFI+ 4G/5G + USB + Serial RS232/485 +
- CAN bus line+ LED screen



Intelligent Power Supply & Distribution

- DC12V/24V, AC24V/AC220V power supply,
- Directly power network cameras and other devices,
- Support remote control and monitoring

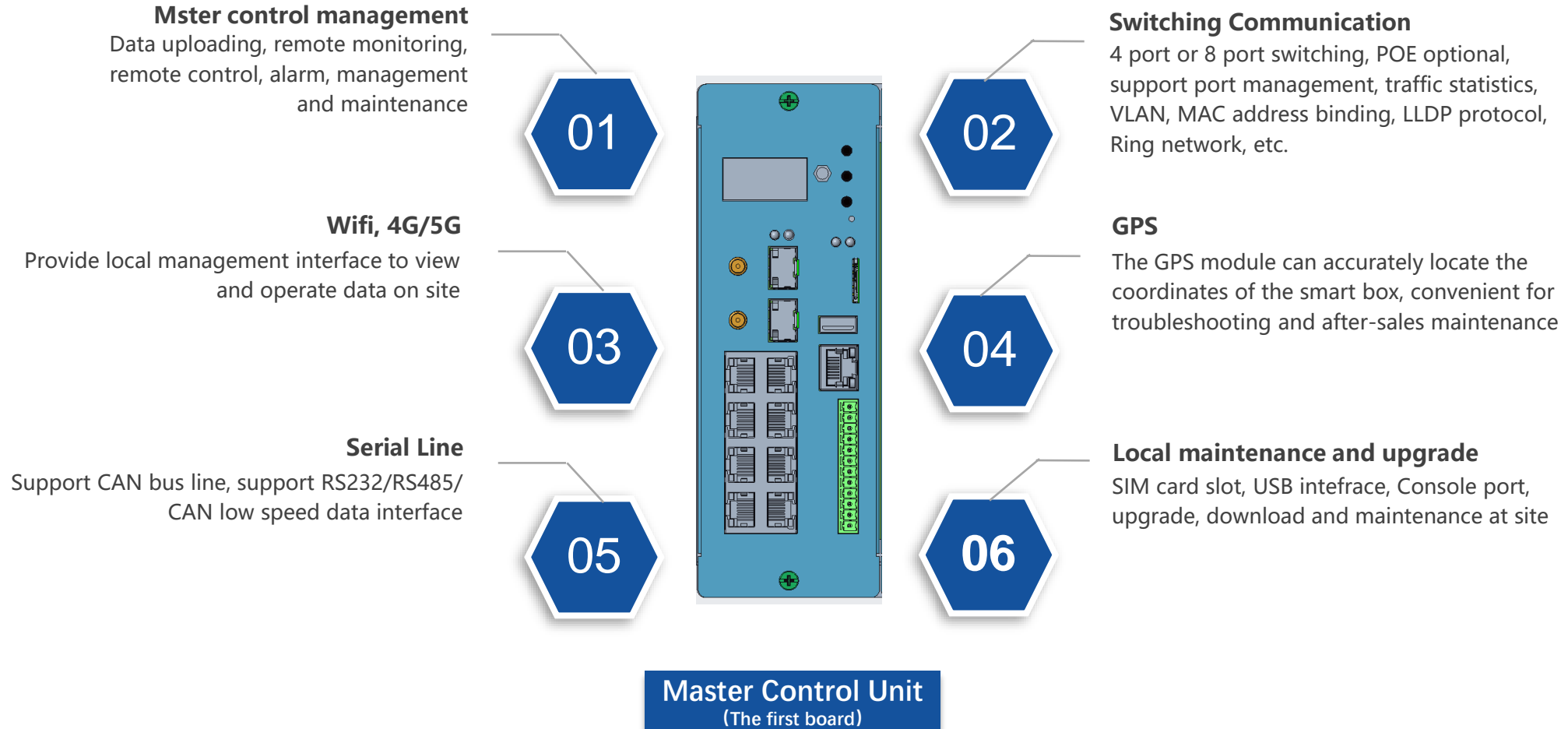


Customization

- OEM/ODM
- Function development
- Color & Shape design
- Fully developed and customized according to the project



FUNCTION 1- Communication Integration



FUNCTION 2- Intelligent power supply and distribution

02

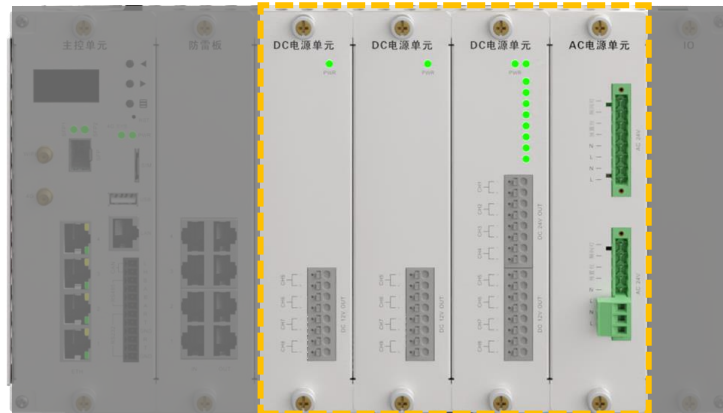
Controllable

Support main control and single-channel control power, single power indicator

01

AC/ DC power supply

DC12V/24V, AC24V/220V Power supply, provide power for different types of device directly



03

Monitorable and manageable

Independent power supply can be controlled, current and power status can be detected

Power Supply Units
(Card slots 3-6)

Physical Protection

Rugged galvanized sheet housing; IP55 protection; Insect proof net; Waterproof sealing strip; multi layer paint

Doors Open Protection

Optional dual protection of physical lock and electronic lock; built in camera captures illegal box opening personnel

Lightning Protection

SPD for AC power supply protection; network lightning board for network lightning protection

Power Supply Protection

Auto reclosing for Leakage; over-voltage; undervoltage; short circuit protection

Fool-proofing Protection

No other cables outside, fool-proof plug; wiring error protection



Alarm

Running alarm; Box door alarm; Power failure alarm; Auto reclosing alarm; Power failure alarm; Power supply alarm, etc

FUNCTION 4- Software management- HOME page

- **Devices**

Devices and quantity on the platform

- **Device Online/Offline rate**

Display the number of devices online and offline in the whole network

- **Device type**

Support adding management switch, box, mini gateway and other brand switches

- **Task**

Devices can be upgraded in batch

- **Language**

Support English, Spanish, other languages can be customized

- **User**

Support password and account modification

- **Alarm level**

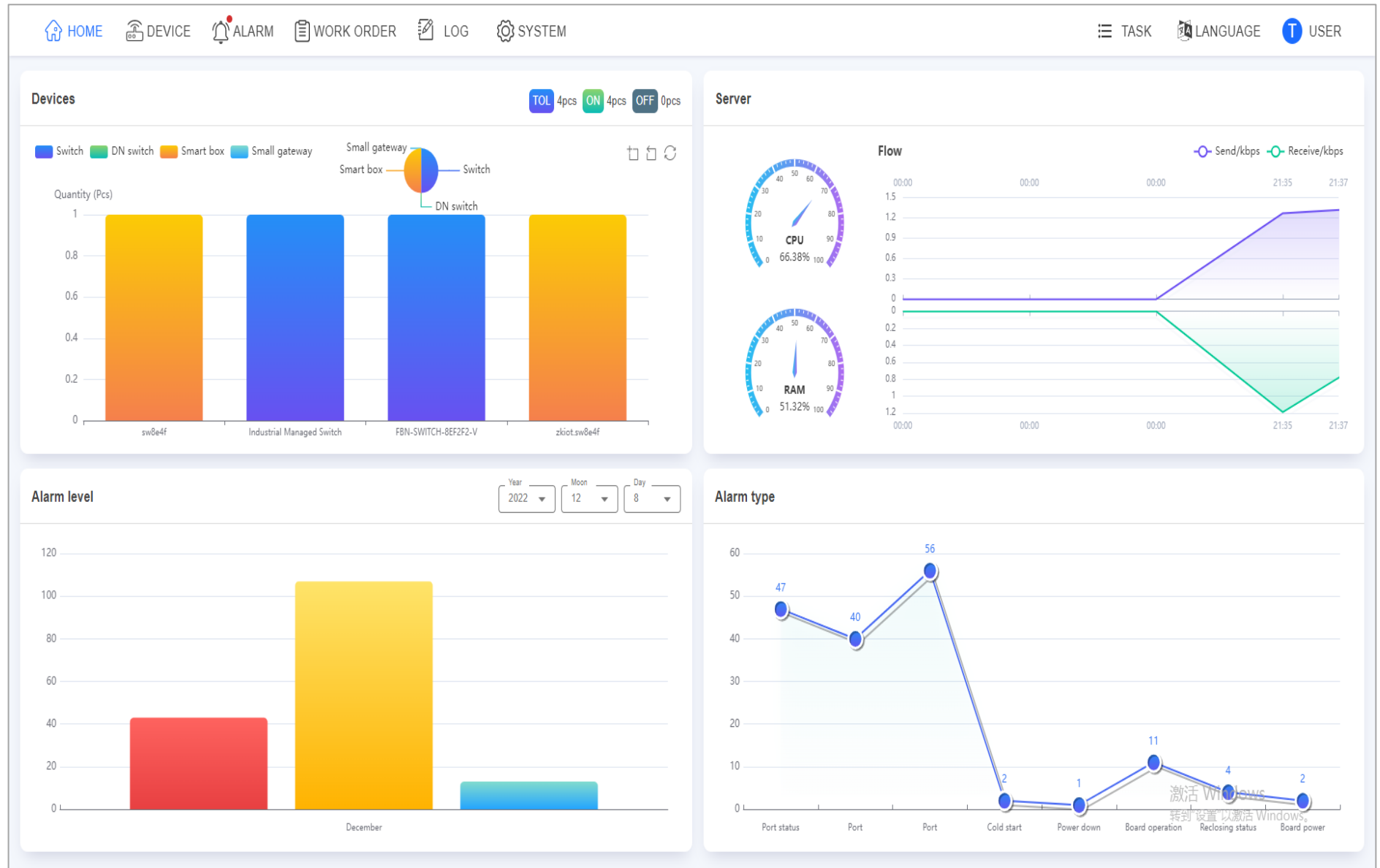
The statistical value of the alarm level on the platform, displayed as a histogram

- **Server**

Status display of the server of the platform, showing the status of CPU, memory, network, etc





- **Alarm type**

The statistical value of the alarm type on the platform, displayed in a line chart



1. Devices

- Adjustable devices display emissions (list/card format supported)
- You can query, export and import the device information on the platform, and view the switch IP, placement position and device number.
- Add: Enter the corresponding device information and add the corresponding devices to the platform.
- REMOVE: You can delete in batch or single device
- EDIT: the device name, area, longitude and latitude, SNMP community word can be modified
- LOCAL: you can log in to the corresponding product and configure all the functional information of the corresponding product
- MORE: Basic device information, device operation status, device system information, port data information

HOME DEVICE ALARM WORK ORDER LOG SYSTEM										TASK LANGUAGE USER	
DEVICES TOPOLOGY MAP			Name/Ipv4/Model			Import Export Add Delete Card					
<input type="checkbox"/>	Image	Type	Status	IPv4	Name	Model	Version	Area	Add time	Operate	
<input type="checkbox"/>		Smart box	Online	192.168.5.62	zkiot.sw8e4f-34608F	zkiot.sw8e4f	V1.7.4.491	home/	2022.12.08 10:36:30	EDIT REMOVE LOCAL MORE	
<input type="checkbox"/>		Switch	Online	192.168.5.113	Industrial Managed Switch2	FBN-SWITCH-8EF2F2-V	hotfix/5.3.12 (r411 e09a3cb)	root/	2022.12.08 10:26:21	EDIT REMOVE LOCAL MORE	
<input type="checkbox"/>		Switch	Online	192.168.5.2	Industrial Managed Switch	Industrial Managed Switch	hotfix/4.0.5 (r2469 f9f1e3f)	home/	2022.12.08 10:16:02	EDIT REMOVE LOCAL MORE	
<input type="checkbox"/>		Smart box	Online	192.168.5.61	sw8e2f-48A7D7	sw8e4f	V1.7.4.491	home/	2022.12.08 10:02:58	EDIT REMOVE LOCAL MORE	

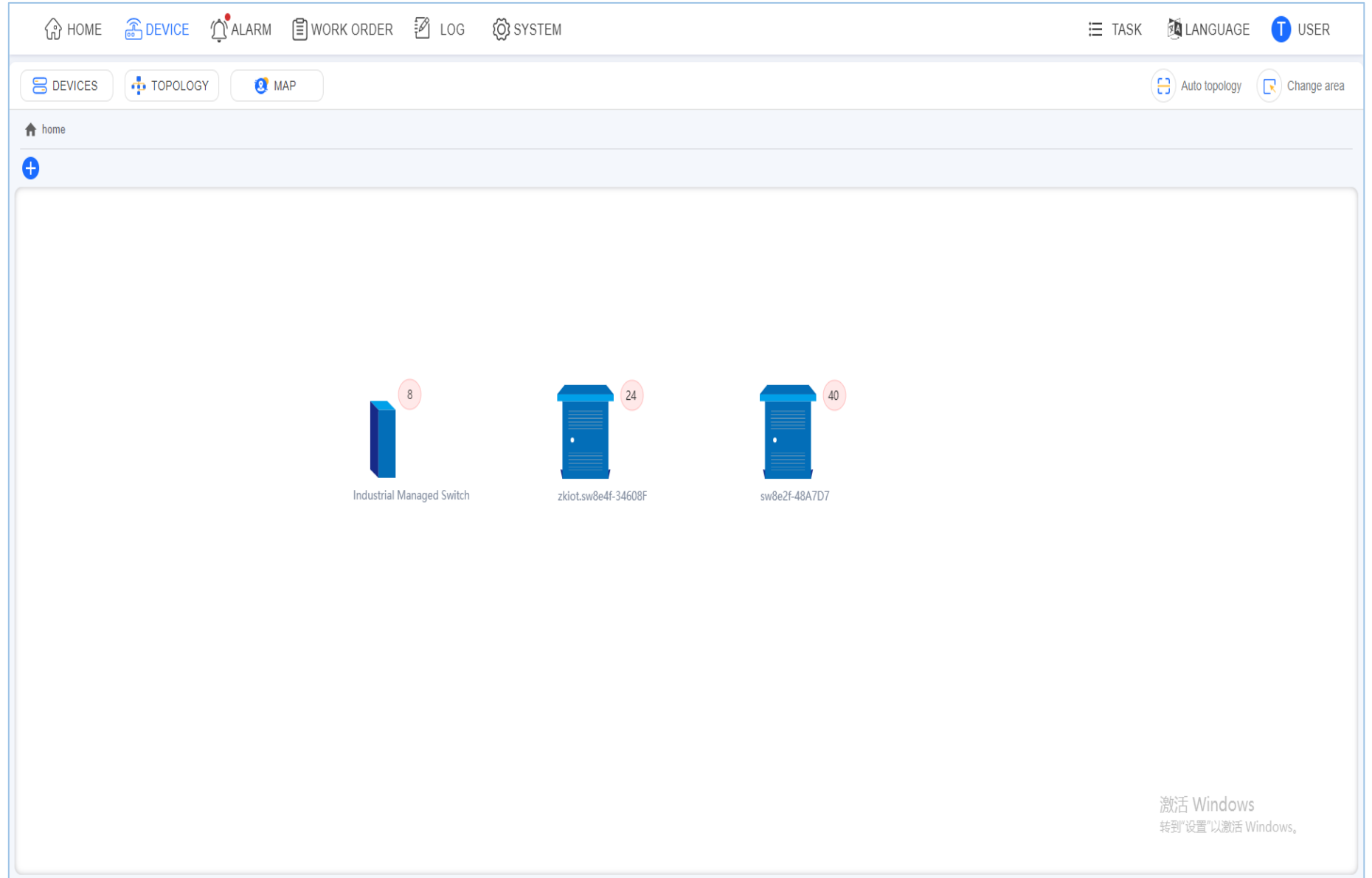
0 selected

1-1 of 1

激活 Windows
转到“设置”以激活 Windows。

2. Topology Management

- Different regions can be created and different regional topologies can be displayed
- Automatically create device connection topology according to IP address segment
- Single device area can be modified
- Modifiable device connecting cable
- EDIT: the device name, area, longitude and latitude, SNMP community word can be modified
- You can view the details of a single device
- Single device alarm can be viewed



The screenshot displays the 'Software management- DEVICE' interface. The top navigation bar includes 'HOME', 'DEVICE', 'ALARM', 'WORK ORDER', 'LOG', and 'SYSTEM'. On the right, there are 'TASK', 'LANGUAGE', and 'USER' options. Below the navigation bar, there are three tabs: 'DEVICES', 'TOPOLOGY', and 'MAP'. The 'TOPOLOGY' tab is selected. The main content area shows a 'home' button and a '+' icon. Three device icons are displayed in a row, each with a red circle containing a number above it: 'Industrial Managed Switch' (8), 'zkiot.sw8e4f-34608f' (24), and 'sw8e2f-48A7D7' (40). A Windows watermark is visible in the bottom right corner.

HOME DEVICE ALARM WORK ORDER LOG SYSTEM TASK LANGUAGE USER

DEVICES TOPOLOGY MAP Import map Set map

Name/ipv4/Model

- Site map can be imported
- Map level and map center point can be set
- The longitude and latitude of the map management device can be modified

Ipv4	192.168.5.61
Type	smartBox
Longitude	59.59
Latitude	36.3

Ipv4	192.168.5.62
Type	smartBox
Longitude	
Latitude	

Alarm

- The number of alarms can be displayed according to the alarm level

- Send work order: multiple alarms or one alarm can be checked and sent to the corresponding maintenance personnel for maintenance

- Confirm alarm: after confirming the alarm, the maintenance personnel can be dispatched

- Delete alarm: delete the confirmed alarm entries

HOME DEVICE ALARM WORK ORDER LOG SYSTEM											TASK	LANGUAGE	USER
43 107 13			ipv4			Send work orders			Confirm alarm	Delete alarm			
ID	IPV4	Level	Type	Alarm info	Time of occurrence	Confirm status	Confirm user	Confirm time	Comment	Operate			
1064	192.168.5.113	Serious	Port	Port 11 Down	2022/12/8 13:20:28	?				✎ ✓ ✕			
1063	192.168.5.113	Major	Port	Port 11 Up	2022/12/8 13:20:25	?				✎ ✓ ✕			
1062	192.168.5.113	Major	Port	Port 9 Up	2022/12/8 13:20:25	?				✎ ✓ ✕			
1061	192.168.5.62	Major	Port status	Port 10 Up	2022/12/8 11:24:11	?				✎ ✓ ✕			
1060	192.168.5.61	Major	Port status	Port 9 Up	2022/12/8 11:23:54	?				✎ ✓ ✕			
1059	192.168.5.61	Major	Port status	Port 9 Down	2022/12/8 11:23:44	?				✎ ✓ ✕			
1058	192.168.5.62	Minor	Board operation	System Would Be Reboot By Remote Command !!!!	2022/12/8 11:23:40	?				✎ ✓ ✕			
1057	192.168.5.62	Major	Port status	Port 10 Up	2022/12/8 11:22:39	?				✎ ✓ ✕			
1056	192.168.5.61	Major	Port status	Port 9 Up	2022/12/8 11:22:22	?				✎ ✓ ✕			
1055	192.168.5.61	Major	Port status	Port 9 Down	2022/12/8 11:22:12	?				✎ ✓ ✕			
1054	192.168.5.62	Minor	Board operation	System Would Be Reboot By Remote Command !!!!	2022/12/8 11:22:07	?				✎ ✓ ✕			
1053	192.168.5.62	Major	Port status	Port 10 Up	2022/12/8 11:20:54	?				✎ ✓ ✕			
1052	192.168.5.61	Major	Port status	Port 9 Up	2022/12/8 11:20:38	?				✎ ✓ ✕			

激活 Windows 转到“设置”以激活 Windows。

0 selected

1-30 of more than 30 < >

Work Order

- Display work order entry
- Display whether the work order is received
- Display start maintenance time
- Estimated maintenance duration
- Completion duration
- Confirm the work order
- Enter maintenance duration and maintenance results
- The administrator reviews and completes the work order

The screenshot displays a software management interface with a top navigation bar containing icons for HOME, DEVICE, ALARM, WORK ORDER, LOG, and SYSTEM. On the right, there are options for TASK, LANGUAGE, and USER. Below the navigation bar, a status bar shows five icons with counts: 1 (red exclamation mark), 0 (orange exclamation mark), 0 (blue exclamation mark), 0 (orange exclamation mark), and 0 (green checkmark). A search bar contains the text 'Coding/ipv4'. To the right of the search bar are 'Send work order' and 'Delete' buttons.

The main content area features a table with the following columns: Operate, Maint level, Coding, Send time, Maint user, Device Ipv4, Maint content, Status, Expected to start, Start time, Maintenance time, and Time to complete. A row is visible with the following data: Operate (checkbox), Maint level (gear icon), Coding (button labeled 'Ordinary'), Send time (WO1670477659860), Maint user (2022/12/8 13:34:19), Device Ipv4 (admin), Maint content (192.168.5.113), Status ({"port": 2001, "status": "up"}), Expected to start (Not received), Start time (0), Maintenance time (0), and Time to complete (0).

A modal dialog titled 'Work order progress' is open, showing a vertical flow of steps: 'Not received' (green exclamation mark), 'Take over' (blue exclamation mark), 'Estimated duration(/h)' (input field), 'CONFIRM' (blue button), 'Maintain' (hourglass icon), and 'Verify' (sun icon). A dropdown arrow is visible next to the 'CONFIRM' button.




At the bottom of the interface, there is a footer with the text '0 selected' on the left, '1-30 of more than 30' in the center, and navigation arrows on the right. A Windows watermark is visible in the bottom right corner.

System management

- Notification: set the platform to notify via SMS, email and WeChat
- Add user: add new account management login platform, and select role assignment
- Role management: you can add new roles and select different pages/regions for management
- Delete user: delete unnecessary user management
- Updatable authorization file
- Can make a backup data plan

HOME DEVICE ALARM WORK ORDER LOG SYSTEM TASK LANGUAGE USER

Notification Add user Role manage Delete user

Photo	Username	Name	Data range	Role	Company	Operate
<input type="checkbox"/>	 admin	Administrator	home/	Administrator		 

Administrator
Username: admin

Email

Phone

Role Administrator

WeChat Unbound

Data range home/

Message service

Device Manage System

Licensed version	Standard Edition
Version	4.1.13
Device upper limit	100
Authorization status	2022/12/11 09:45:18

Update authorization

Please upload a new key

Data backup

激活 Windows
转到“设置”以激活 Windows。

Make a backup plan

< 1 >

FUNCTION 5- Customization



University Campus

Requirements

Power redundancy backup

On the basis of the standard box, add UPS power supply to ensure that the business will not be interrupted and the data will be transmitted normally after the mains power is cut off. At the same time, increase the battery power display, and display the box power supply status on the network management interface.



Urban Subway

Requirements

DC & AC multi type power supply

Multiple control sockets make it convenient to add other devices to the box for power supply, DC12V, AC24V, to power different device, such as cameras, PLC, PON and other devices. The power supply can be remotely controlled. The master control and IO detect the environment inside the box, and the comprehensive operation and maintenance of the platform.



Samrt City

Requirements

Add meter calculation

For municipal projects, the traditional smart box is added with an electric meter calculation unit to calculate how much loss the whole box will produce during use for power consumption statistics.



APPLICATION



05

TECHNICAL SPECIFICATION



TECHNICAL SPECIFICATION

Name	Specification	Description	Unit	Qty
Cabinet	- Dimension: 535*385*230mm, 1.2mm thickness, high quality galvanized sheet with paint spraying - IP66 protection	/	Set	1
Auto reclosing	16A 220V auto reclosing	Leakage, overvoltage and short circuit protection, and online monitoring of the input and output power voltage and current	Pcs	1
AC power supply protector (SPD)	40KA 220VAC	AC power monitoring and control, and real-time monitor the value and times of lightning strick	Pcs	1
Middle frame business backplane	Master Control Board 1*LAN port + 1*USB + OLED screen(Including operation button) + Serial and Can bus line - Switching option 1: managed, 1x100M SFP with 4x10/100M PoE - Switching option 2: managed, 1x1000M SFP with 4x10/100/1000M PoE - Swithcning option 3: managed, 2x1000M SFP with 8x10/100/1000M PoE	Status monitoring and upload to the platform, can be remote controlled. - OLED screen, to check the basic information of IP address, voltage, currect, temperature, humidity, etc. - LAN port: management port - USB port: Upload/download the configure files of the cabinet; software upgrade - CAN bus line and RS232/485 interface	Pcs	1
	Lightning Protection Board - 100M 4 port lightning protection (for 100M 4 port switching) - 1000M 4 port lightning protection (for 1000M 4 port switching) - 1000M 8 port lightning protection (for 1000M 8 port switching)	For network lightning protection	Pcs	1
	DC 60W Power Supply Board AC-DC 60W power supply, 4-channel output	DC12V output, 4-channel, 60W total, can connect with camera, single channel max 60W	Pcs	1
	IO Acquisition Board 3 network ports, 1 Phoenix terminal port, single fan interface	- Collecting the data in the box, including the temperature, humidity, water inlet state, etc. - Connect to the fan(DC24V), connect to the LED light(DC24V)	Pcs	1
Software	Operation & Maintenance software	/	Pcs	1
DC power supply for the cabinet and switching	220V AC to DC power supply - AC-DC 48V, 80W (non poe) - AC-DC 48V, 200W (for poe 4 port) - AC-DC 48V, 350W (for poe 8 port)	/	Pcs	1
Socket	Standard socket (European/UK/Other types)	For testing or backup using	Pcs	1



TECHNICAL SPECIFICATION

Name	Specification	Description	Unit	Qty
MCB breaker	25A	The main control switch of the electricity of the cabinet	Set	1
Splice tray	Fiber plice tray	/	Pcs	1
Optical fiber rack	SC 4 port fiber rack	/	Pcs	1
Temperature controlled fan	DC12V	Extraction fan for fast cooling, can set the temperature threshold for fan on and off	Pcs	1
Optical fiber fixing buckle	For optical fiber fixing	For fiber cable fixing	Pcs	1
Mini ODF	SC 4 port fiber	/	Pcs	1
LED light	DC24V LED light strip	When the cabinet door open, the led light on, when the cabinet door close, the led light off	Pcs	1
Box door induction switch	Box door induction switch button	Sensing the opening and closing state of the box door	Pcs	1
Storage trays	Placement of other items	/	Pcs	1
Document storage hook	Hook	For testing or backup using	Pcs	1
Accessories	Connecting cable	/	Pcs	1
Lever lock of the box door	Dual purpose lock (padlockable outside the case door)	/	Pcs	1

Optional Function

Master Control	Wifi (On site maintenance)	PCS	1
	4G /5G	PCS	1
	GPS (Location positioning, combined with online map function, facilitates maintenance)	PCS	1
PTZ access board	External interface board for PTZ with preset position and strobe light, etc.	PCS	1
DC12V power board	220V AC to DC12V 100W 8-channel output, single board general control board	PCS	1



TECHNICAL SPECIFICATION

Optional Function				
DC12V power board	AC220V AC to DC12V 100W 8-channel output, single board general control board	PCS	1	
DC12V power board	AC220V to DC12V 6-channel output, single channel control board (used with external power supply)	PCS	1	
AC power board	AC220V 5-channel output, single channel control board (single channel power supply not more than 3A)	PCS	1	
Wide voltage supply single control board	12-58v DC / AC adaptive 6-channel output, single channel control board (used with external power supply)	PCS	1	
AC ring transformer	220V AC to AC 24V 200W power supply	PCS	1	
AC24V power module	220VAC to 24VAC 200W 4-channel output, single way control board (with ring transformer)	PCS	1	
USB Pinhole camera	Built-in camera 1.3 megapixels	PCS	1	
Water inlet detection	Water inlet coil	PCS	1	
Heating rods	Timing heaters	PCS	1	
IO expansion boards	Connection of serial ports and switching signals inside the box	PCS	1	
Electronic lock of box door	Electronic lock, support remote unlocking	PCS	1	
Brace	Pole installation	PCS	1	
Stainless steel cable ties	Accessories, 2 strips in a box	PCS	1	

Thanks for your attention!

Factory Area
&
Testing facilities

