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User Manual of Management System in Smart Power Distribution Area






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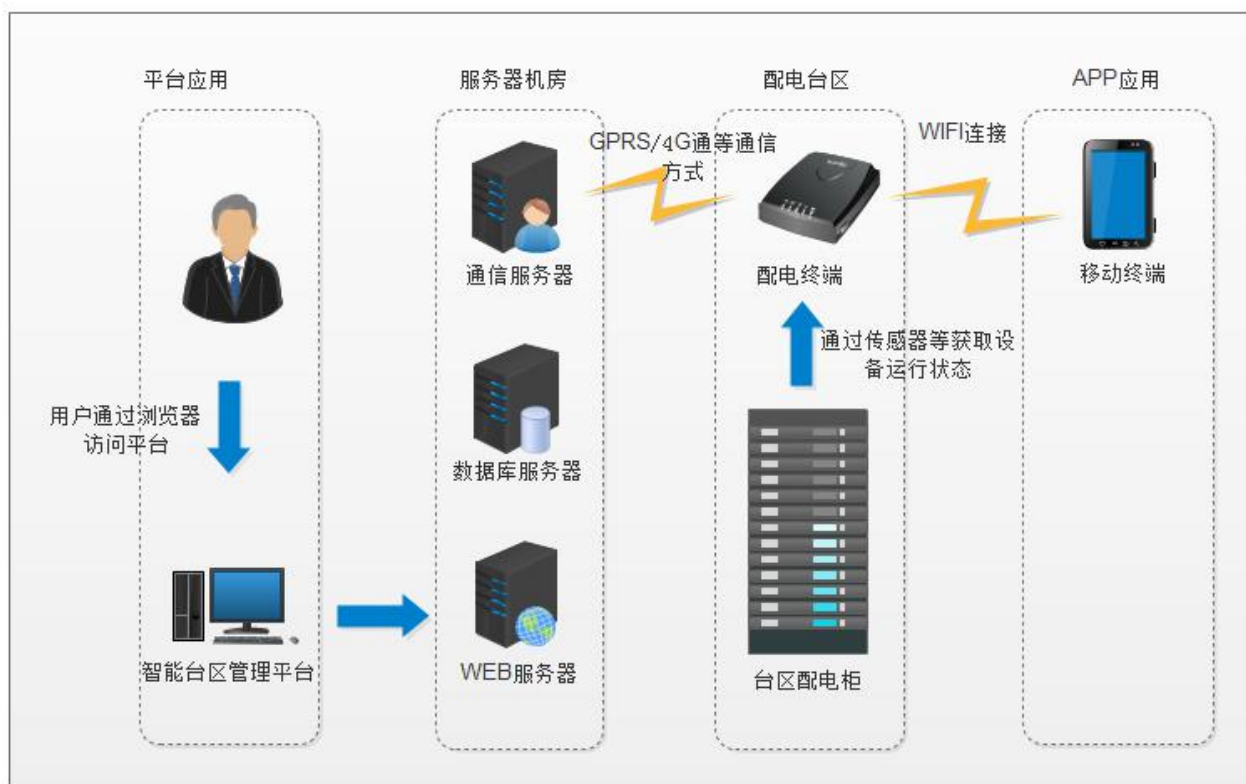
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Chapter 1 Introduction of the Management System

1.1 General

Management system in smart power distribution area is mainly composed of power distribution station, smart terminal, platform, and APP. The smart terminal monitors the distribution area through sensor, and report to the platform. If the alarm rings, platform will notify the administrator by sending SMS. Through the platform, it can realize remote control and the maintenance of equipment. Based on the reported historical data, a report will be generated for analysis. Near the distribution station, user can realize the maintenance operations by the App installed on mobile phone. For example, to know the loading status of the station, the operation status of the equipment, control the switch, and modify the equipment parameters and so on. That offers the maintenance crew man great convenience for operation on site.

1.2 Topology of System Network



Real Scene of Power Distribution Area:



Chapter 2 Functions Introduction

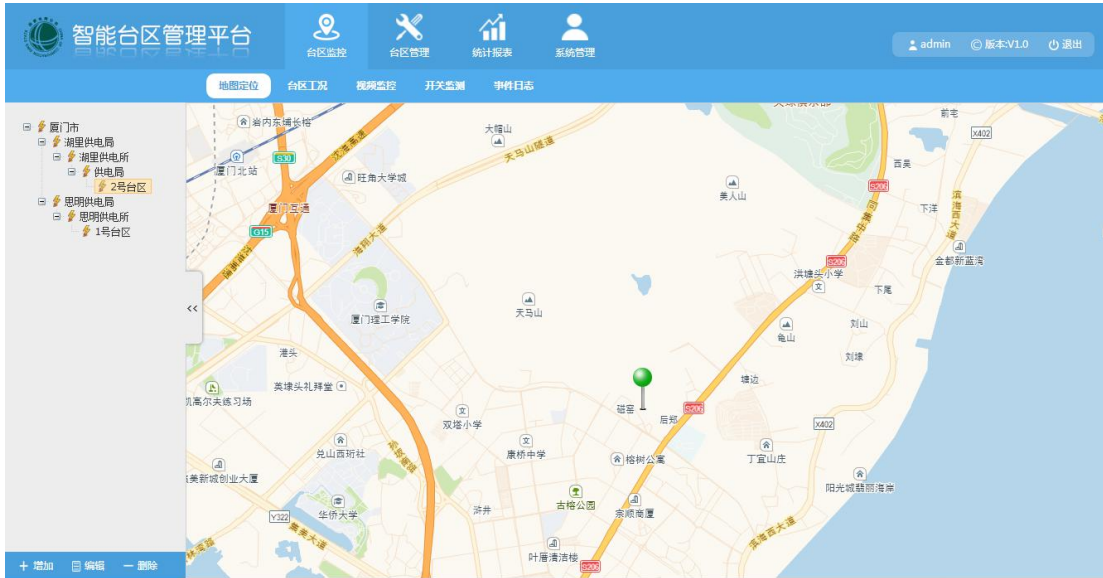
2.1 Login

Input the address: <http://192.168.9.174:1005/login.do> on browser to login, the default account and passwords are: admin/123456. Following is the opened login page:



2.2 Map Positioning

Enter the account and password to pass the verification, the location map page is as follows:

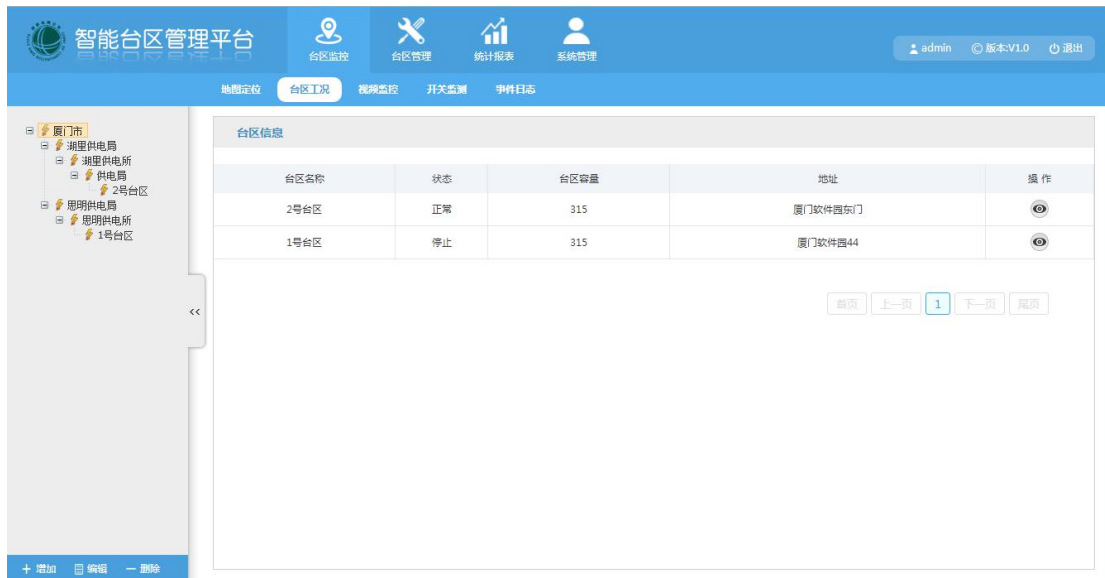


Select the information on left tree diagram, it will show the located monitored area. Green markings are the normal operating districts, and the red markings mean that the monitored areas are stop working.

2.2.1 Working Condition of Monitored Area

- ◆ **Information of Monitored Area:** name, status, address, and capacity of the monitored area.
- ◆ **Real-Time Data:** load rate, active power, reactive power, oil temperature, humidity, three-phase current, three-phase voltage, high pressure connector temperature, and low pressure connector temperature.
- ◆ **Alarm Log:** click to view the current alarm status and historical event log.
- ◆ **Reset Button:** click the reset button, the alarm event will be updated to the viewed state.
- ◆ **Monitoring Shooting:** click on the monitoring shooting button to remote control on-site photo shooting.
- ◆ **Intelligent Leakage Protection:** click on the intelligent leakage button to load the page of intelligent leakage switch parameters and relevant functions of switch opening and closing.
- ◆ **Smart Capacitor:** click the capacitor icon to display the related parameters of capacitor.
- ◆ **Function Diagram:** click the diagram to switch function.

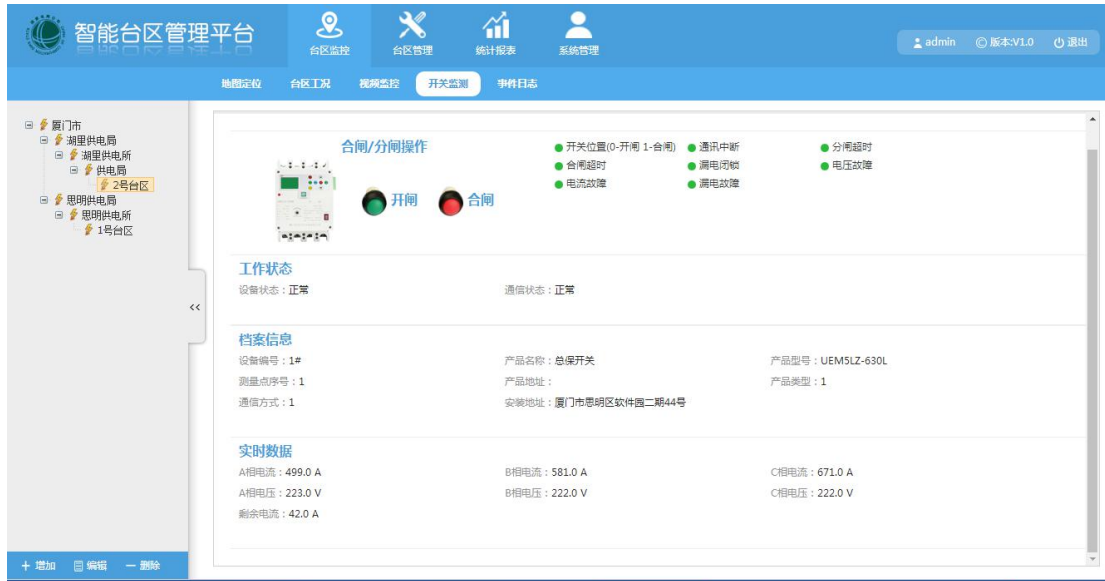
Select the "Working Condition of Monitored Area", the menu is as follows:



By selecting the tree diagram information of monitored area on the left side, or the "Operate" icon in the area information list, user can monitor the working conditions in the area. Details are shown in the following figure:



By clicking the "Intelligent Leakage Protection" switch in the monitored area working condition to open the switch page, following are the details:



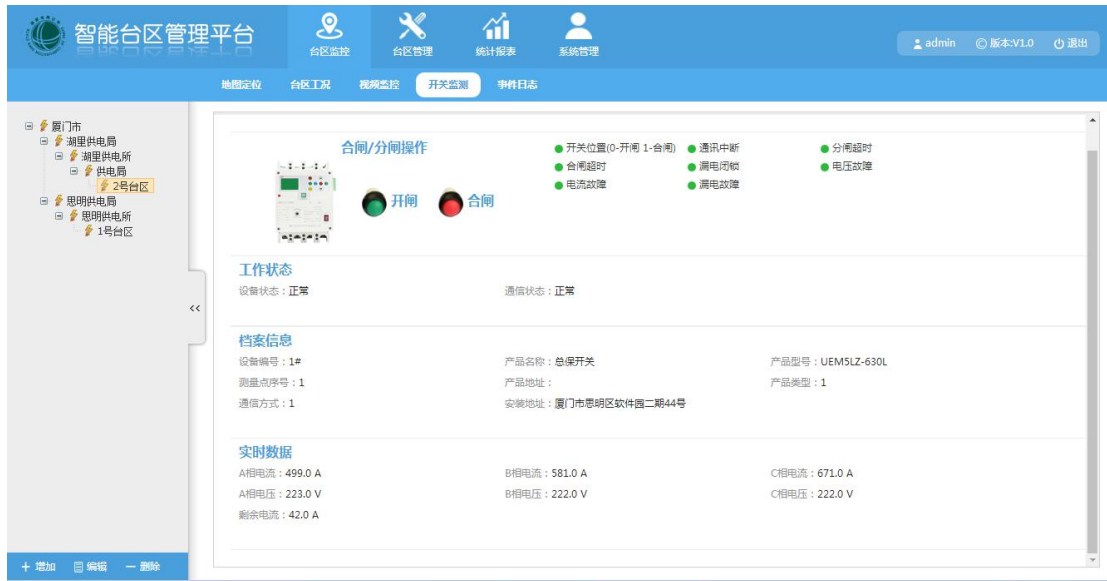
User is able to control the switch by clicking the "Opening" or "Closing" icon.

2.2.2 Switch Monitoring

Select the "Switch Monitoring" menu to display switch list which is shown as below:



By clicking the "Operate" icon in switch information list to load the switch parameters information, which is shown below:

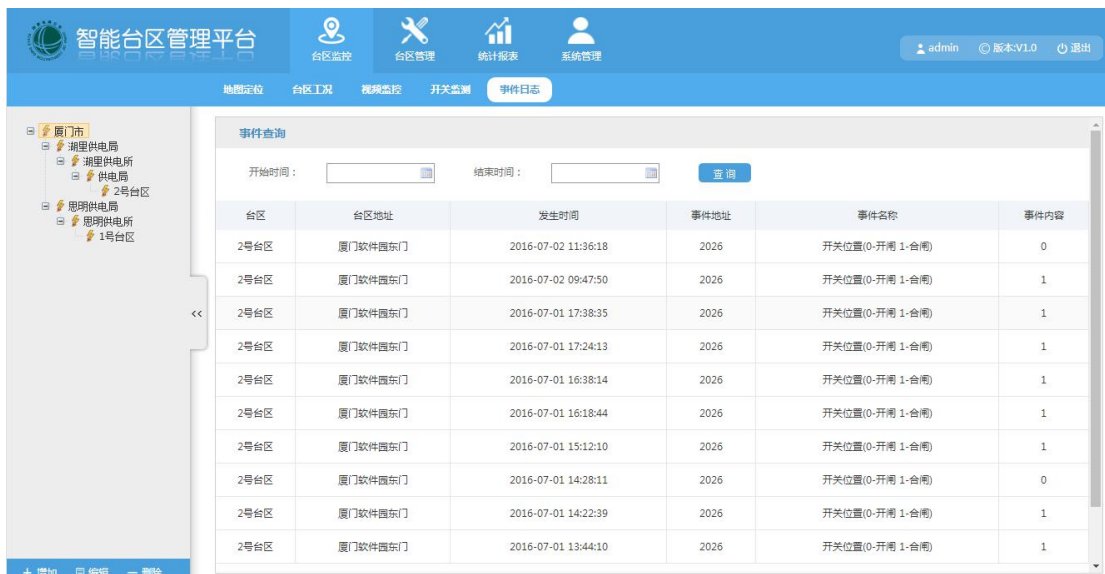


2.2.3 Even Log

◆ **Event Query:** The current event records of monitored area includes switch opening and closing record, protection activated record, leakage limit, load limit, phase loss, loss of pressure, three-phase unbalance alarm, temperature rise, displacement, security, and door opened record and so on. These records can be read and query through the time and area.

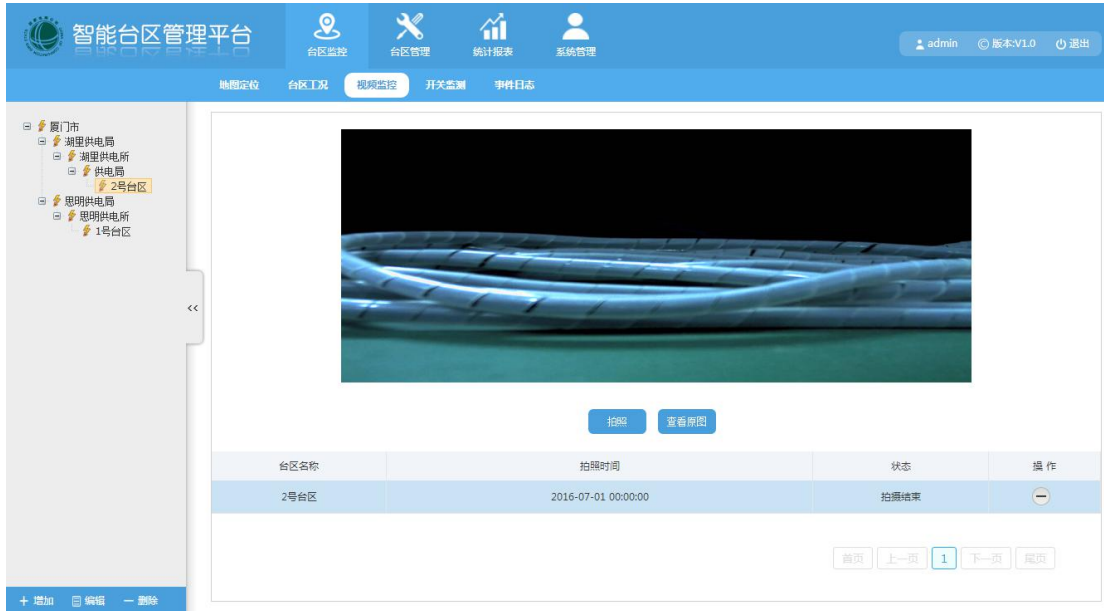
◆ **Event List:** display area address, sent time, event address and event content.

Select the "Event Log" menu, and the interface is as follows:



2.2.4 Video Surveillance

Select the monitored area on the left tree diagram, click the “Camera” button on the right, then the camera instruction will be sent, when shooting successful, it shows in the photo area, and the photo shooting record will be saved in the database. The details are as follows:



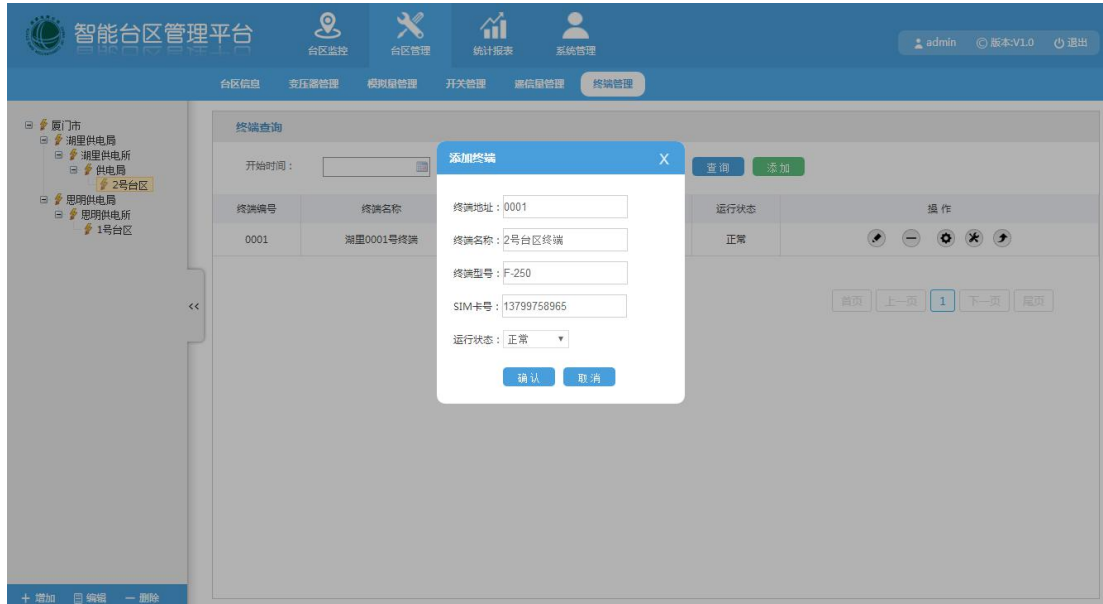
2.3 Management of the Monitored Area

2.3.1 Terminal Management

◆ **Equipment file:** terminal list contains the terminal name, terminal number, terminal model, SIM card number, and running status (0:normal;1:fault). As shown below:



◆ **To add the terminal:** click the "Add" button, there will be a pop-up terminal form, fill in the relevant information and save.As shown below:



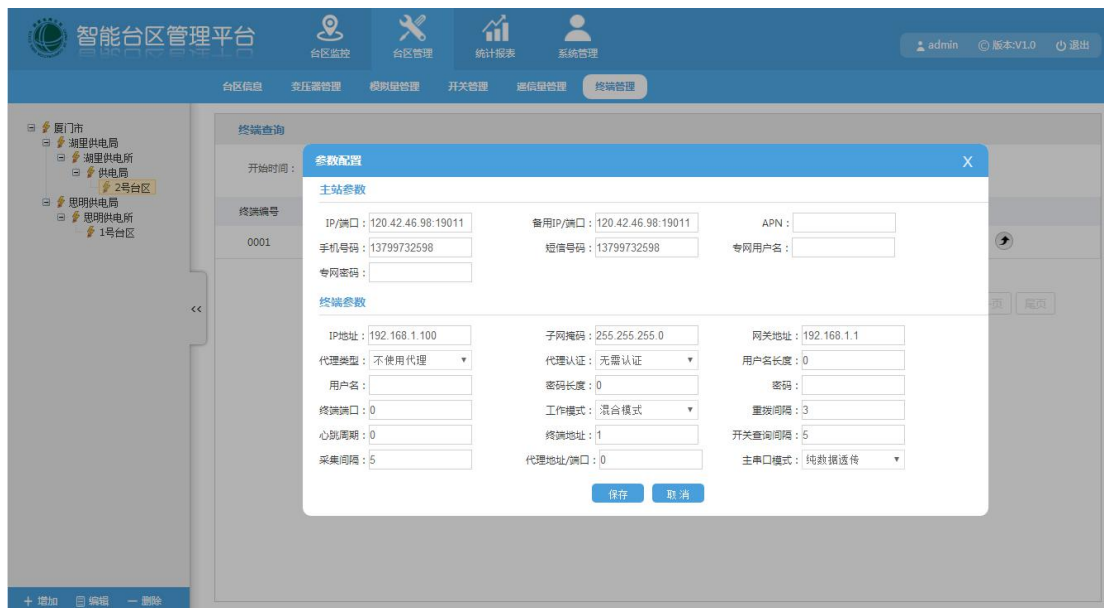
◆ **To edit the terminal:** select the terminal information in the terminal list, click the "Edit" button,the terminal form pop up, then fill in the relevant information and save,as shown below:



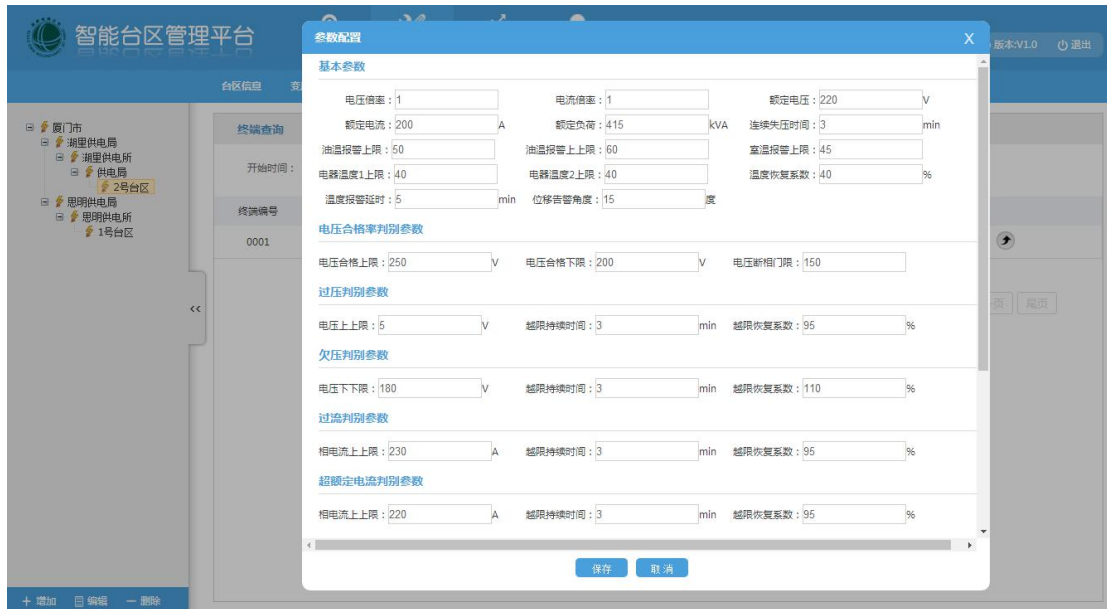
◆ **To delete the terminal:** click the "Delete" icon in the terminal list to confirm whether to delete the data or not, as shown below:



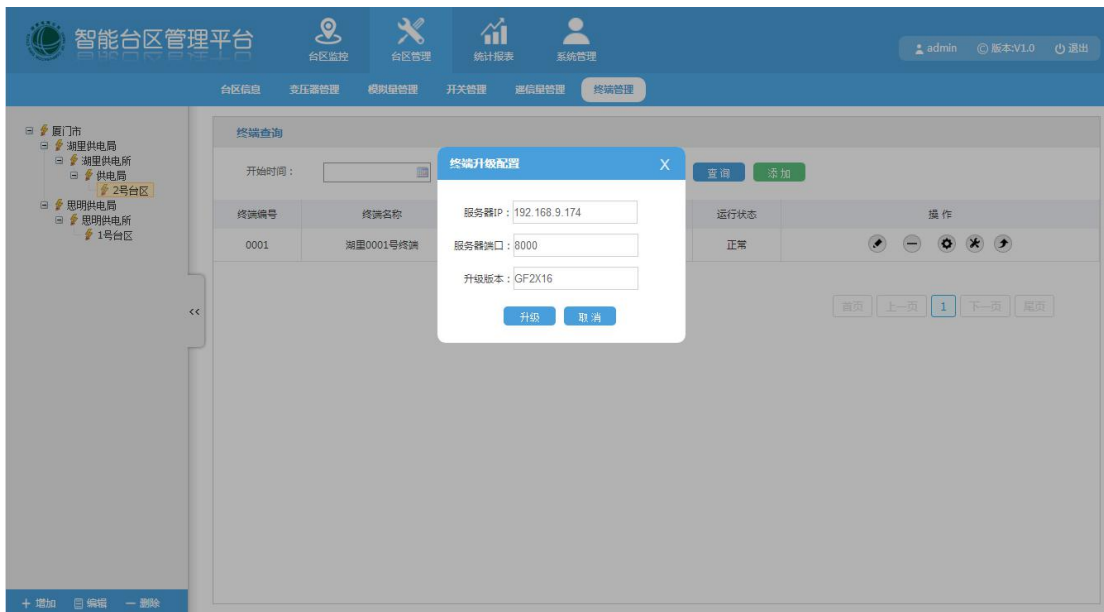
◆ **Terminal parameters:** to achieve the remote modification of terminal parameters, as shown below:



◆ **Monitored area parameters:** to achieve the remote modification of monitored area business parameters, as shown below:



◆ **Terminal upgrade:** to achieve remote upgrade function, and fill in the relevant parameters as follows:

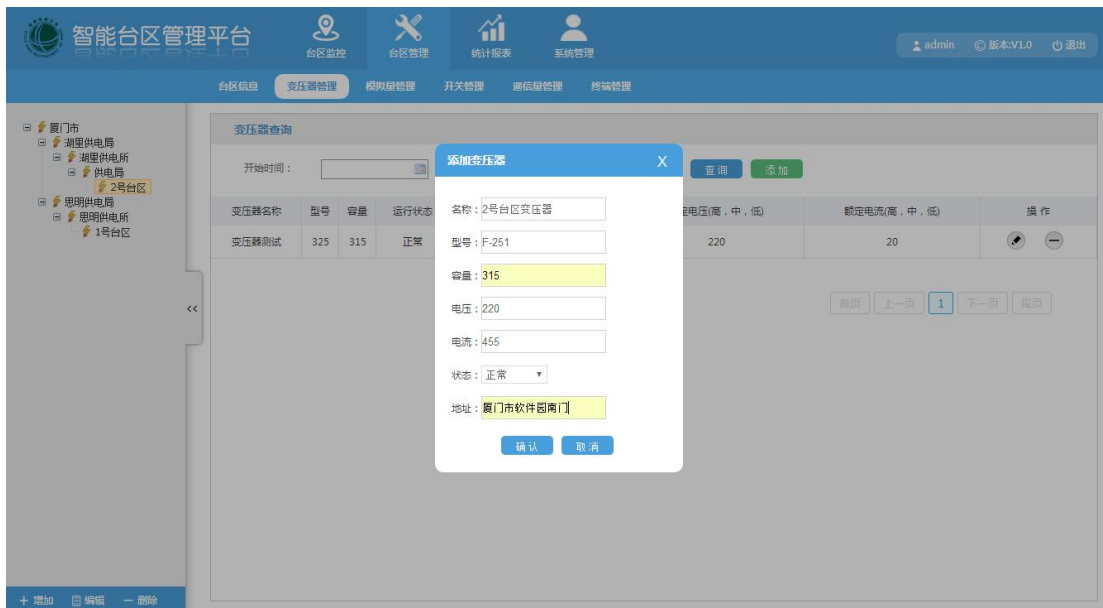


2.3.2 Transformer management

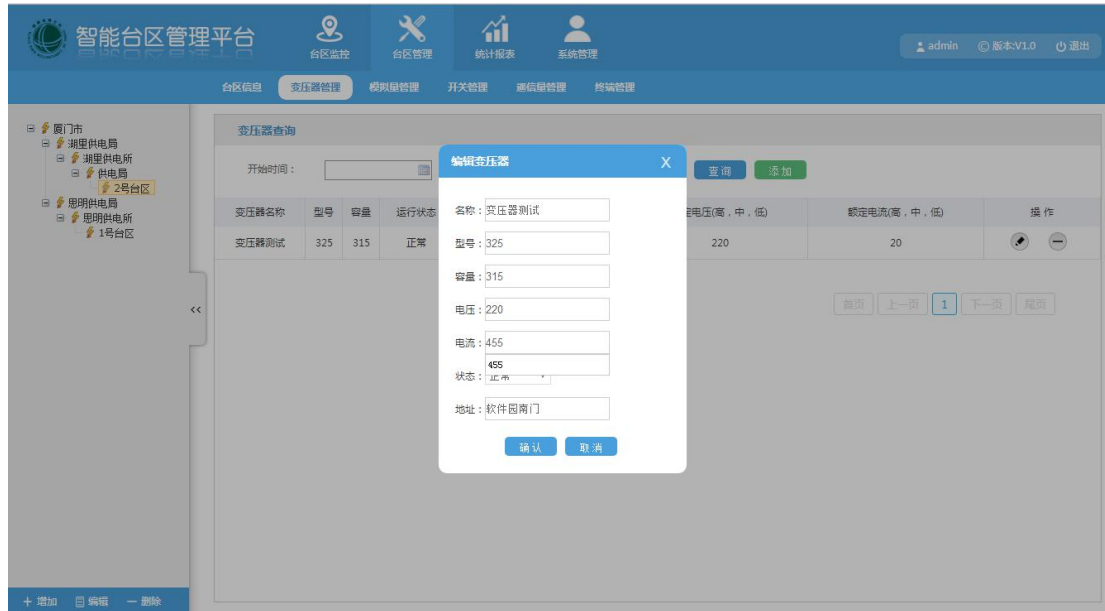
◆ **Equipment file:** the transformer list contains transformer name, transformer model, transformer capacity, operating status (0: Normal; 1: Failure; 2: Disabled), installation date, rated high voltage range, rated medium voltage range, rated low voltage range, rated current in high voltage, rated current in medium voltage, and rated current in low voltage, as shown below:



◆ **To add the transformer:** click the “Add” button, and pop-up transformer form, then fill in the relevant information and save, as shown below:



◆ **To edit the transformer:** select the transformer information and click on the “Edit” button, there will be a pop-up transformer form, then fill in the relevant information and save, as shown below:

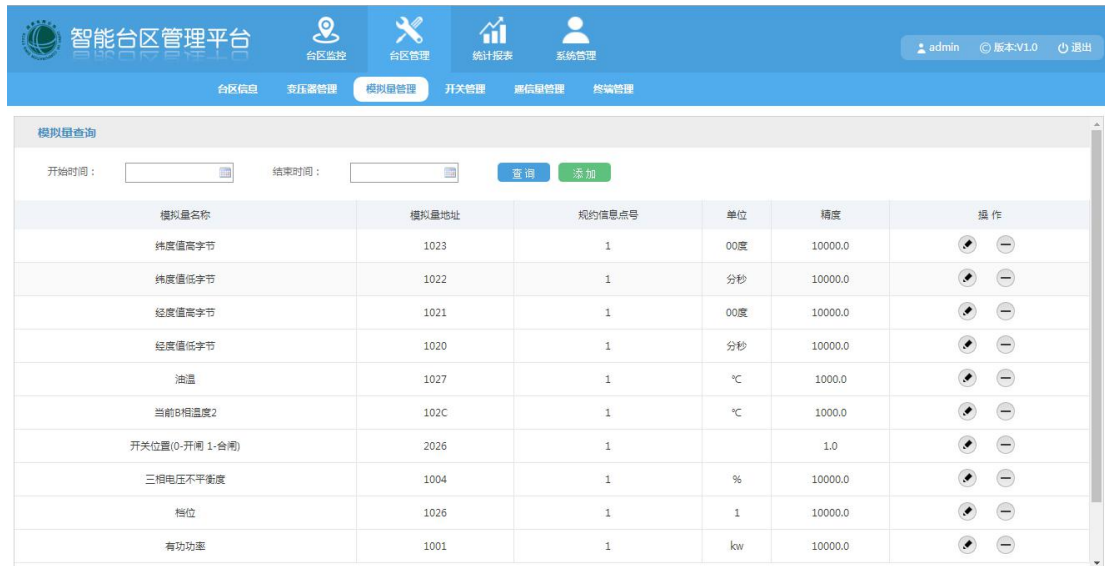


◆ **To remove the transformer:** click the "Delete" icon in the transformer list and confirm whether to delete the data or not, as shown below:

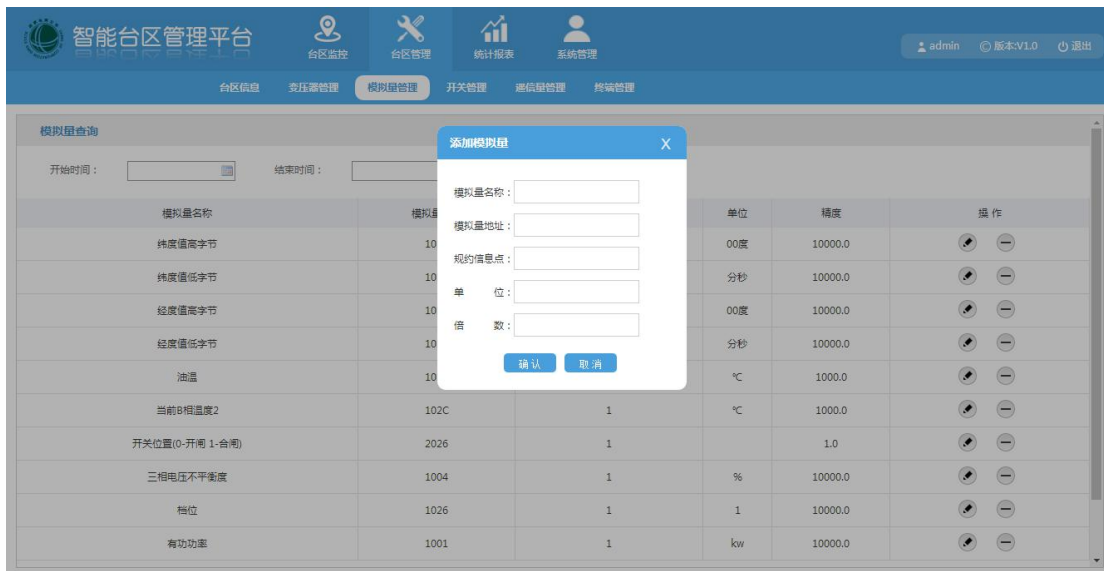


2.3.3 Analog Signal Management

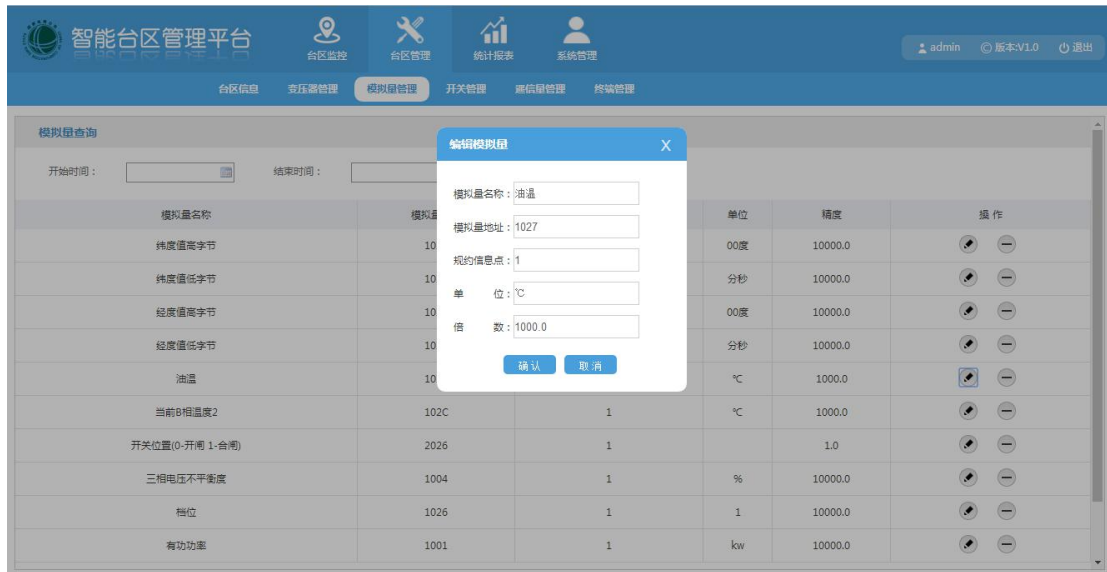
◆ **Analog signal list:** analog signal list includes analog signal name, analog signal address, protocol information point number, unit, accuracy, as shown below:



◆ **To add analog signal:** click the “Add” button and pop up the analog signal form, fill in the relevant information and save, as shown below:



◆ **To edit the analog signal:** select the analog signal information and click the “Edit” button, the analog signal form will pop up, then fill in the relevant information and save, as shown below:

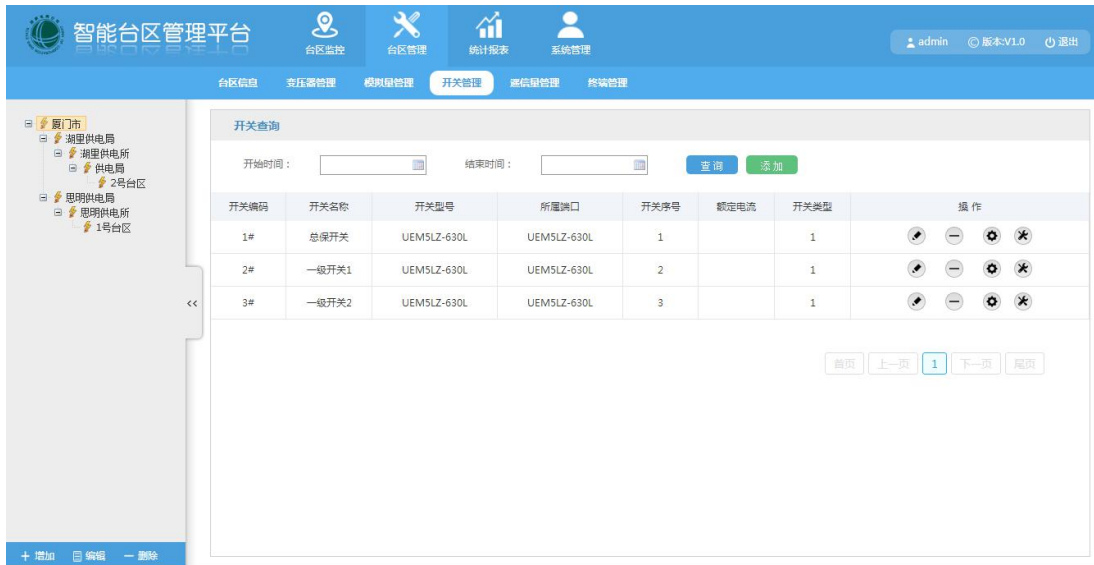


◆ **To delete the analog signal:** click the "Delete" icon in the analog signal list and confirm whether to delete the information or not, as shown below:

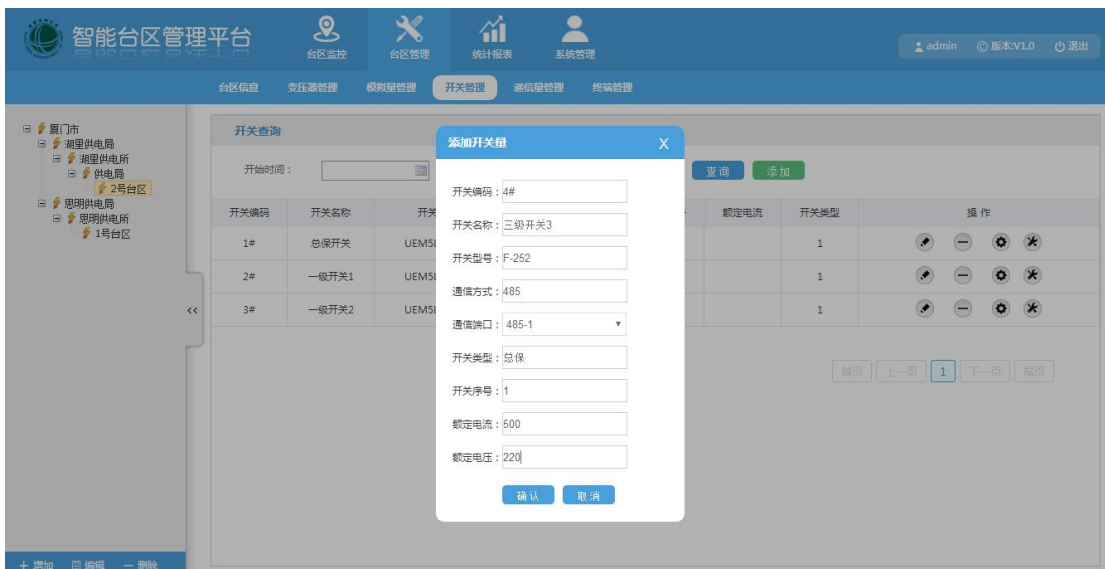


2.3.4 Switch Management

◆ **Equipment file:** protection switch list includes the name of the protection switch, protection switch model, the port switch serial number, communication, rated current, and protection switch type, as shown below:



◆ **To add switch list:** click the “Add” button and protection switch form pop up, fill in the relevant information and save,as shown below:



◆ **To edit protection switch:** select the protection switch information click the “Edit” button and protection switch form pop up, then fill in the relevant information and save,as shown below:



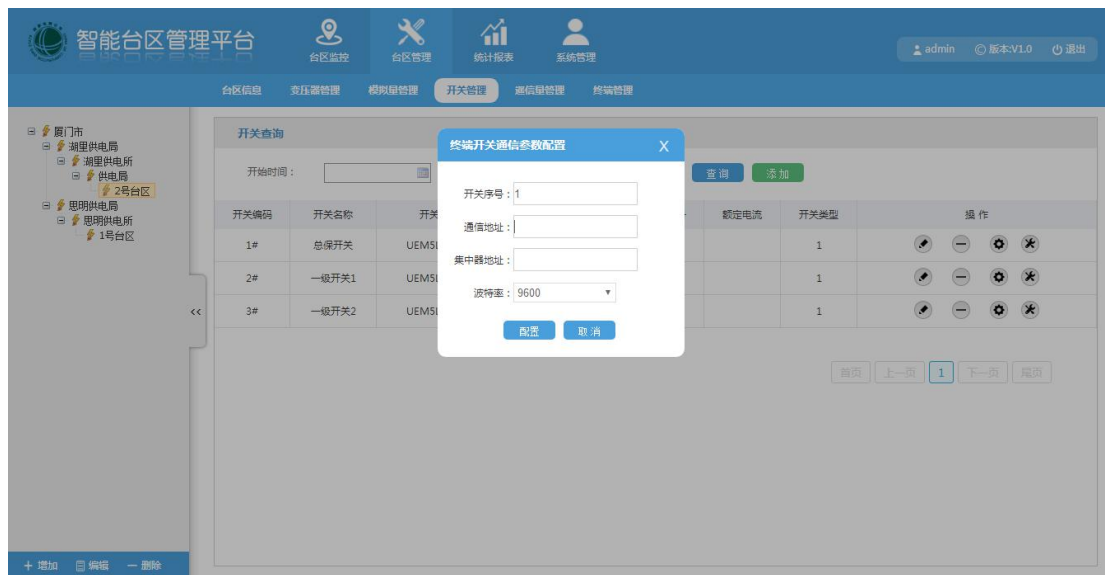
◆ **To delete protection switch:** click the "Delete" icon in the protection switch list and confirm whether to delete the information or not, as shown below:



◆ **Switch parameters:** click on the "Set" icon in the protection switch list to load the real-time switch parameters, as shown below:

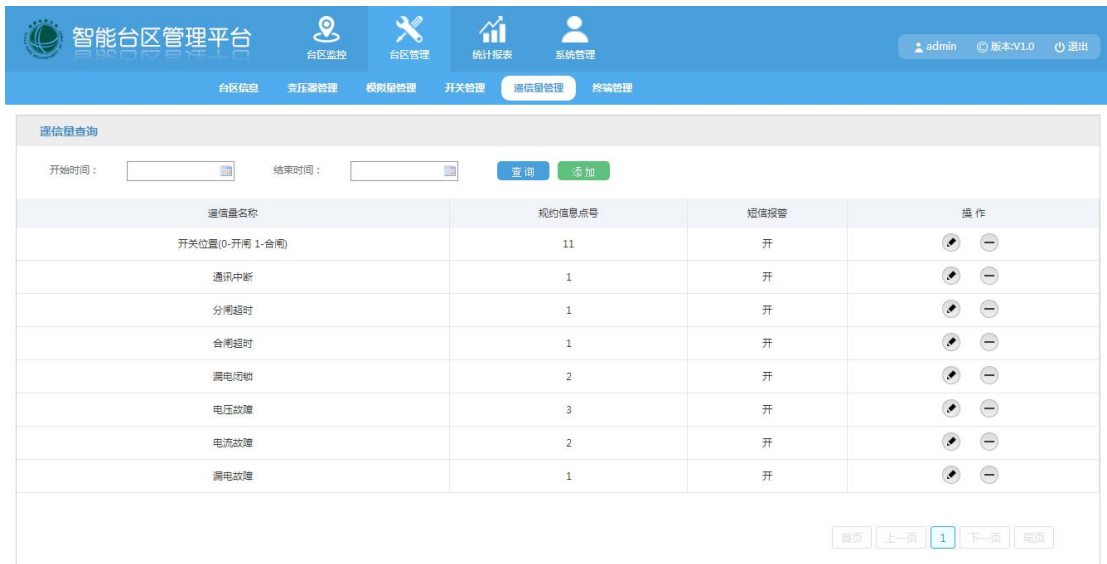


◆ **Terminal switch parameters:** click on the "Set" button in the protection switch list to load the real-time terminal switch parameters, as shown below:

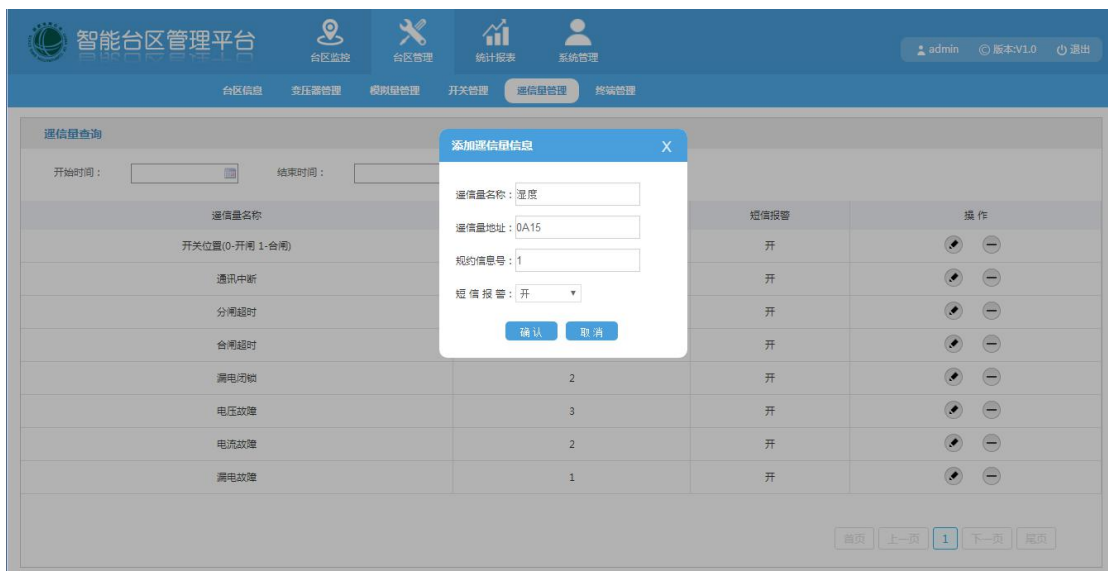


2.3.5 Management of Remote Communication Data

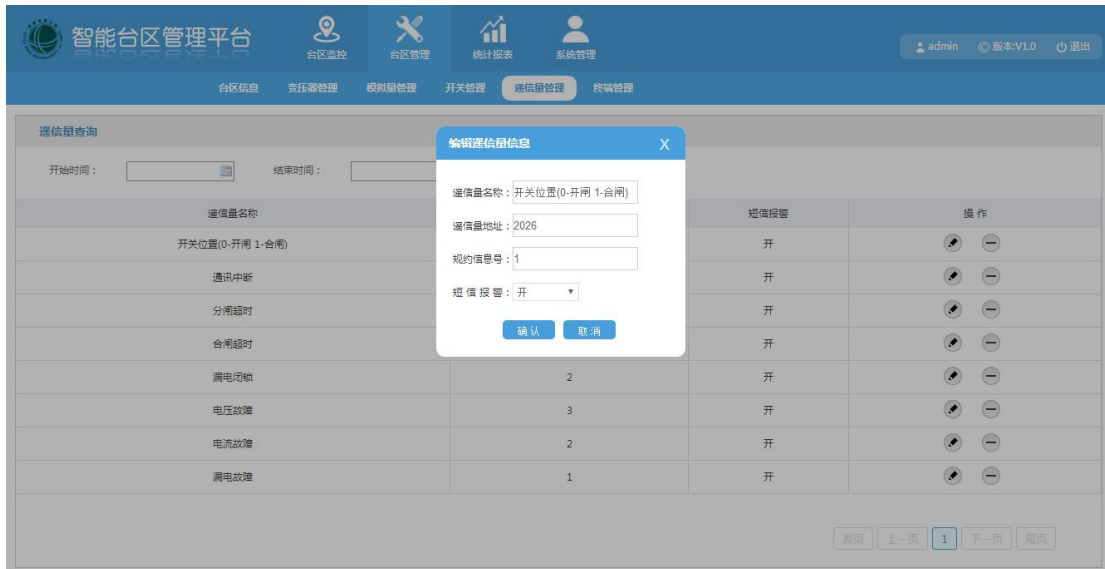
◆ **Equipment file:** switch number list contains the types of remote communication data, protocol information point number, SMS alarm, as shown below:



◆ **To add the type of remote communication data:** click the “Add” button and remote communication data sheet pop up, then fill in the relevant information and save, as shown below:



◆ **To edit the type of remote information data:** select the remote communication data, click the “Edit” button and remote communication data sheet pop up, then fill in the relevant information and save, as shown below:

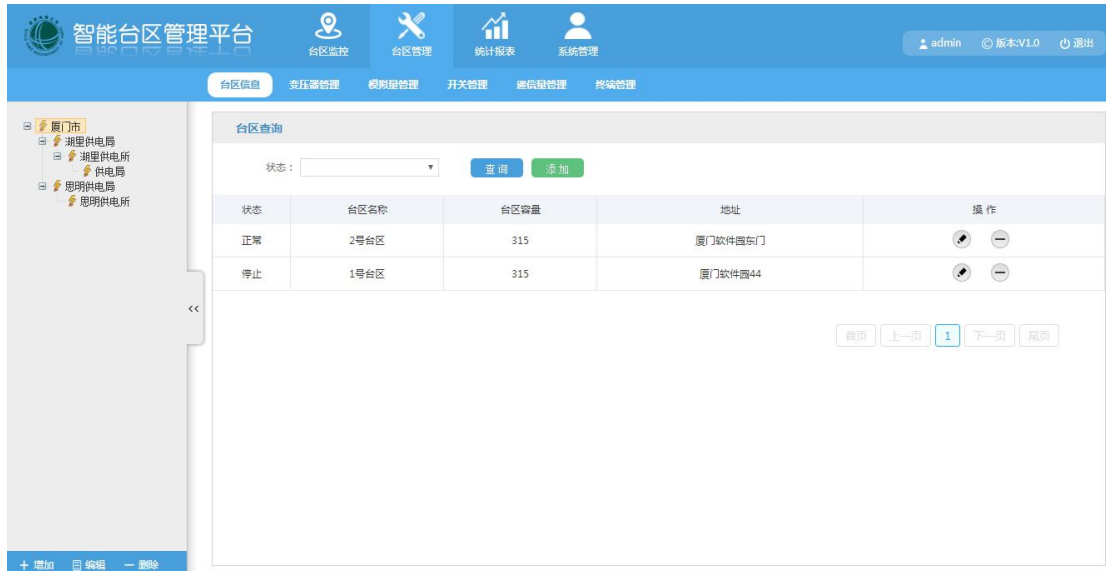


◆ **To delete the remote communication data type:** click the “Delete” icon in the remote communication data type list to confirm whether to delete the information or not, as shown below:

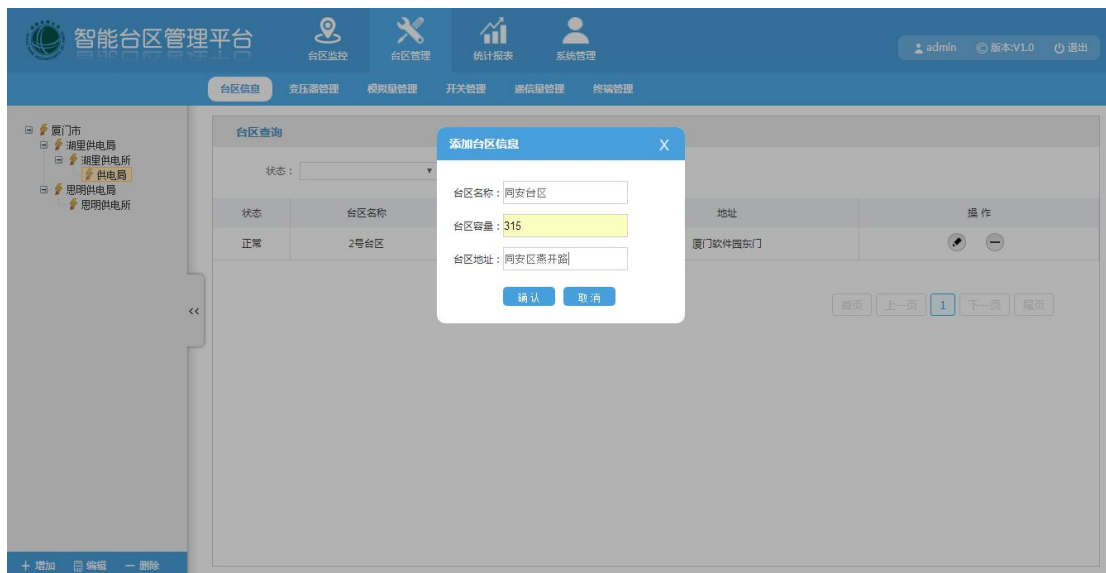


2.3.6 Information of Monitored Area

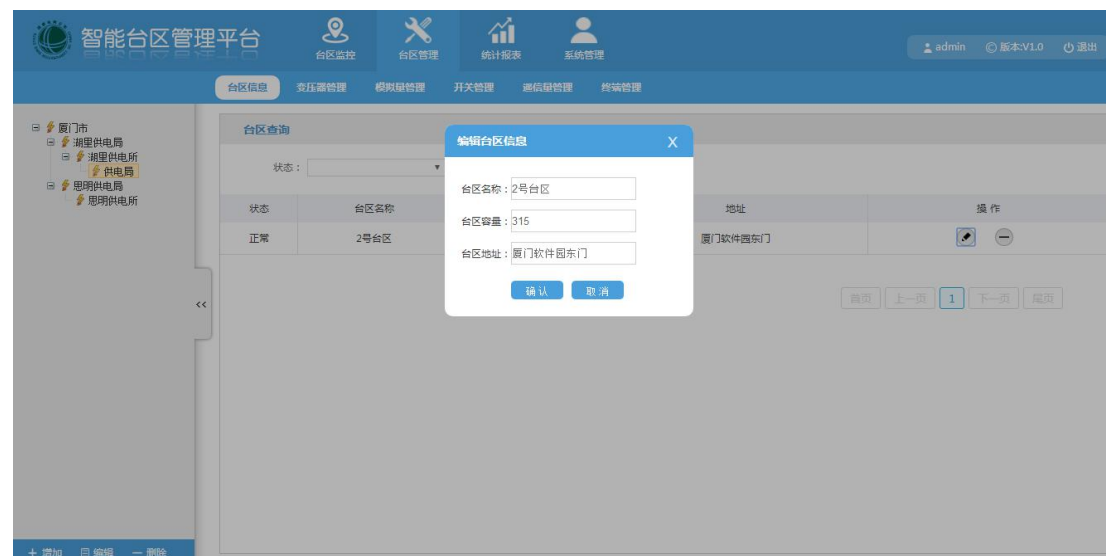
◆ **List of Monitored Area:** the list of monitored area contains the area name, capacity, area status (0: Normal; 1: Failure; 2: Disabled), and area address, as shown below:



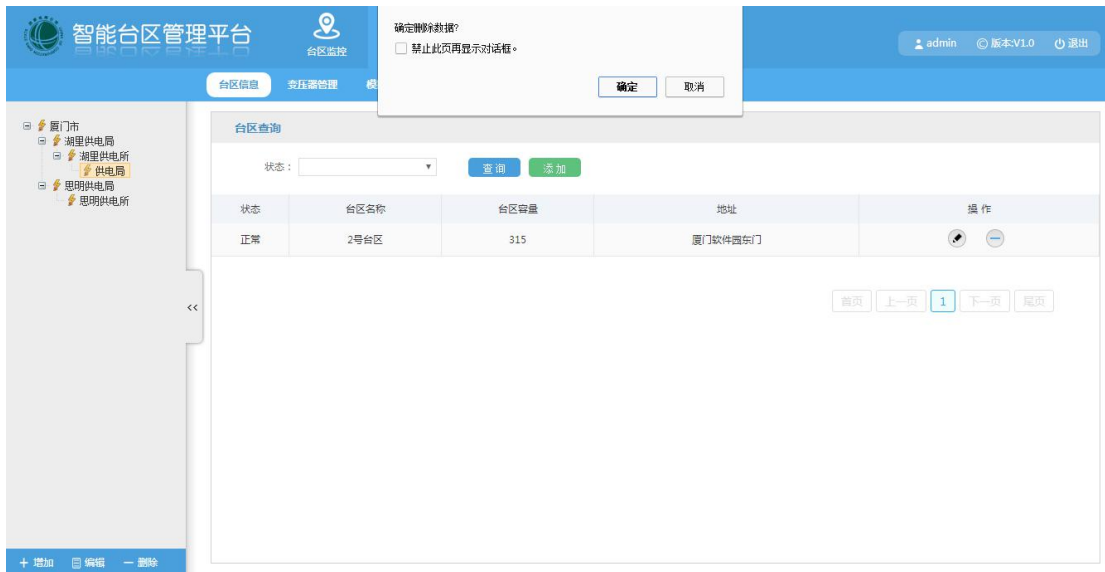
◆ **To add the monitored area:** click the “Add” button and a area information form pop up, then fill in the relevant information and save, as shown below:



◆ **To edit monitored area:** select the monitored area information, click on the “Edit” button and the monitored area form pop up, then fill in the relevant information and save, as shown below:



◆ **To delete the monitored area:** click the “Delete” icon in the list of monitored area to confirm whether to delete the information or not, as shown below:



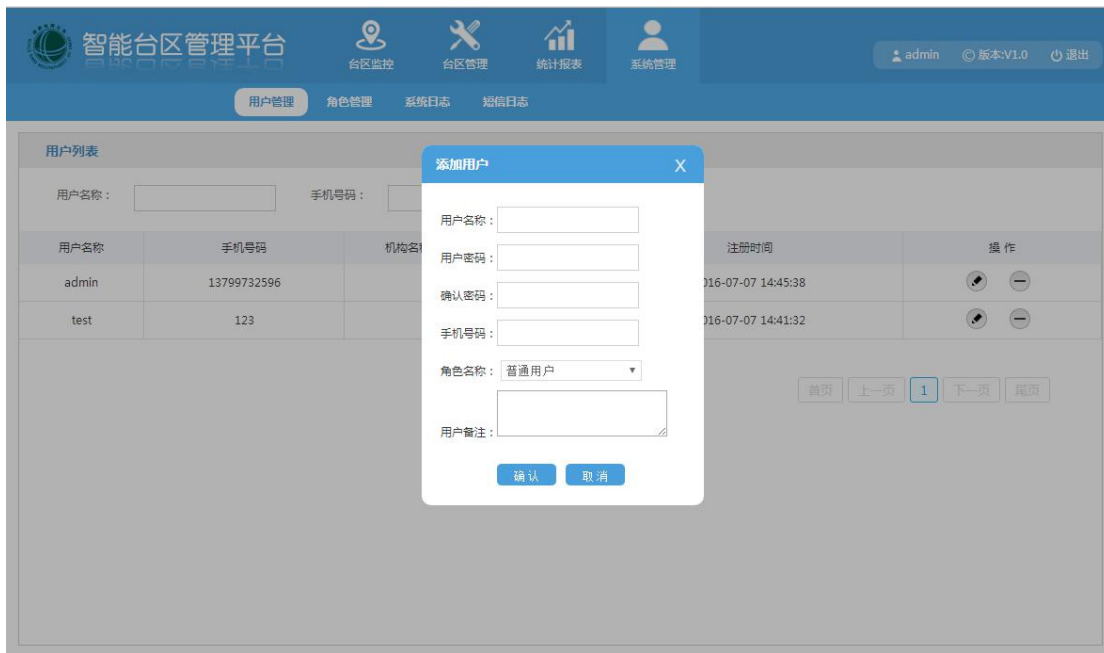
2.4 System Management

2.4.1 User Management

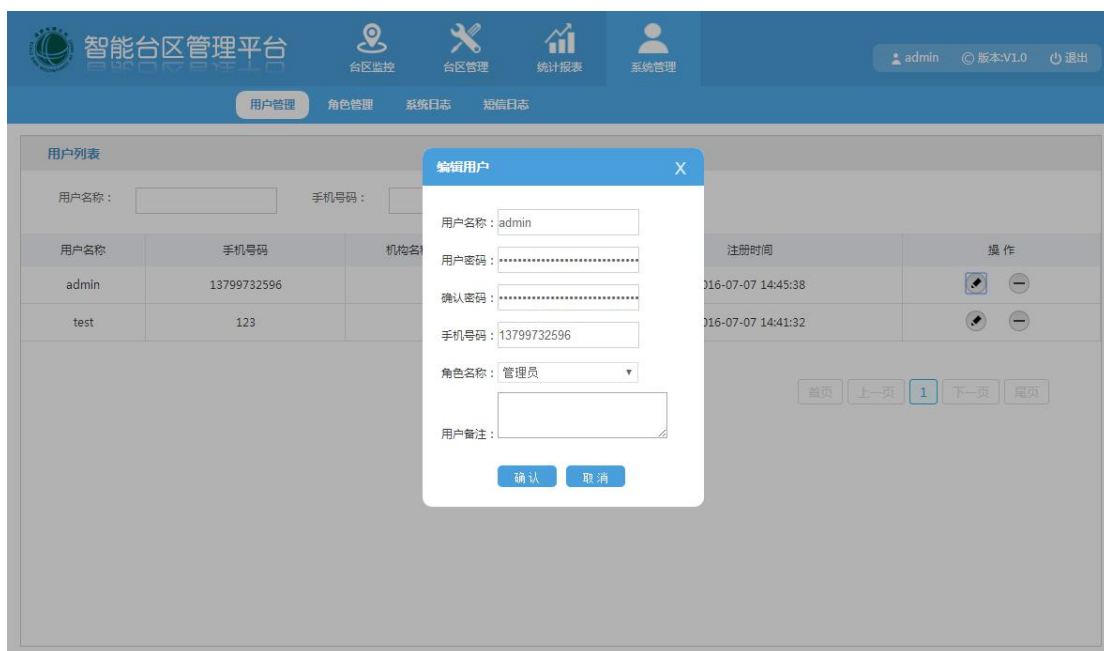
◆ **User list:** user list includes user name, mobile phone number, the role, registration time, user level (0: Ordinary User; 1: Super Administrator), user status (0: Normal; 1: Delete), and the remarks, as shown below:



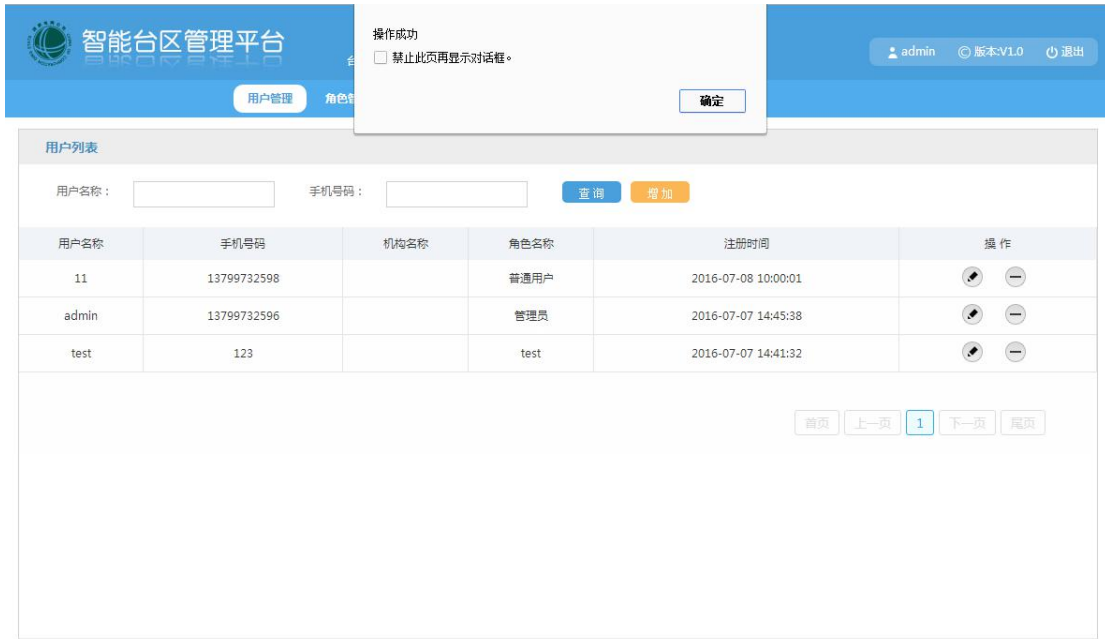
◆ **To add users:** click the “Add” button and a user form pop up, then fill in the relevant information and save, as shown below:



◆ **To Edit the User:** select the existing user information,click the “Edit”button and pop up the user form to update the user information and save,as shown below:

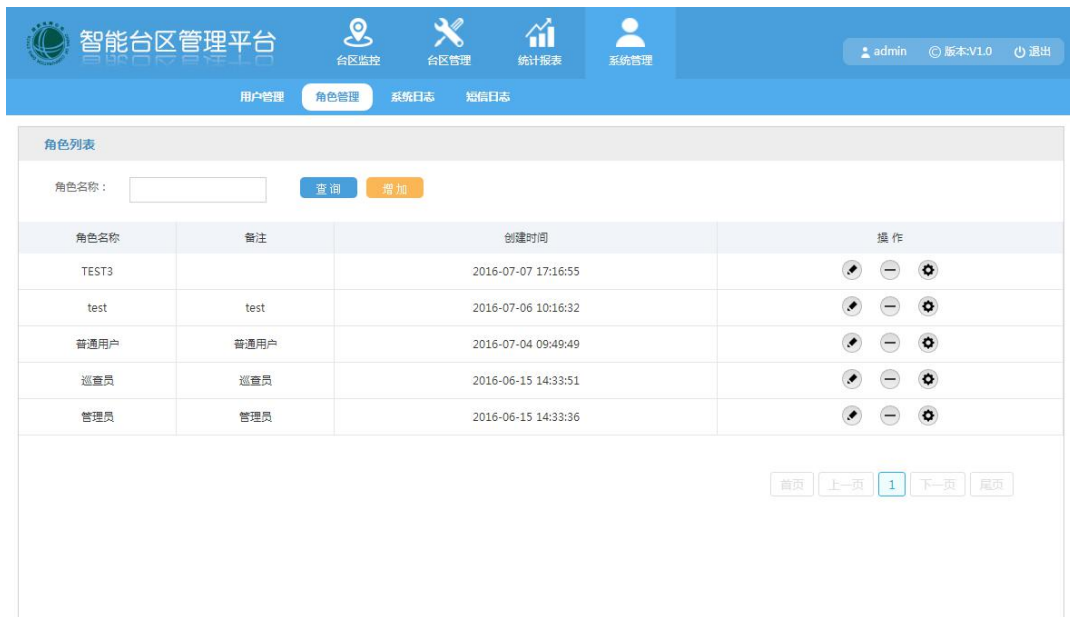


◆ **To Delete the User:** select the user information and click the “Delete” button to delete the information,as shown below:

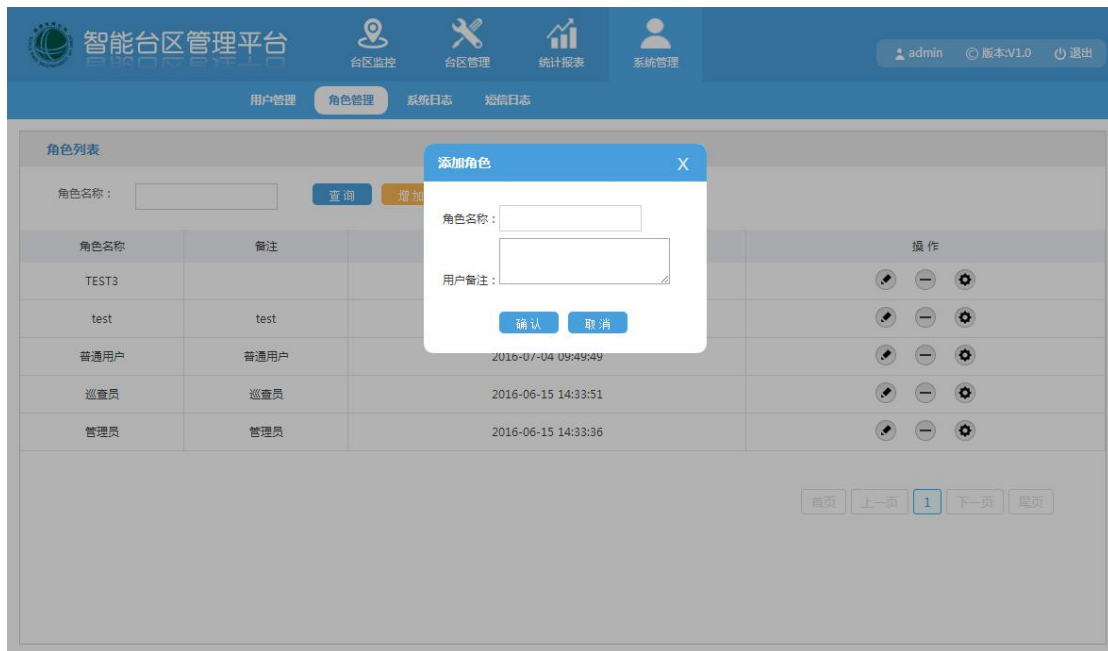


2.4.2 Role Management

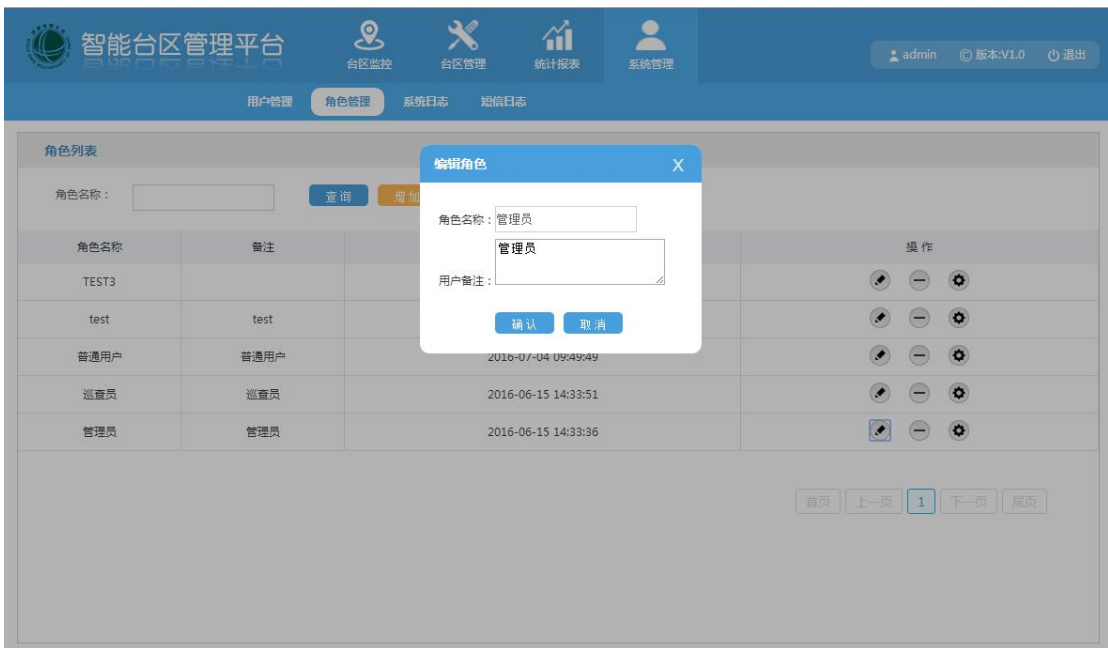
◆ **Role list:** the role list contains the role name, create time and note, the specific information is as follows:



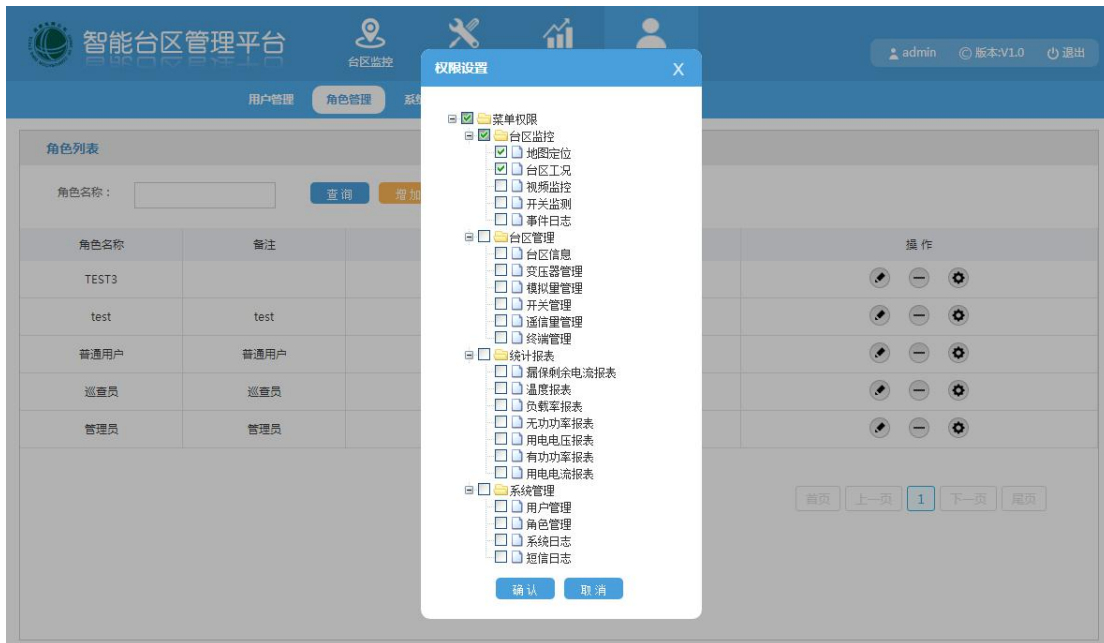
◆ **To add the role:** click the "Add" button and the role form will pop up, fill in the relevant information, then save, as shown below:



◆ **To edit the role:** select the existing role information, and click the "Edit" button, the role list information form will pop up, then modify it and save, as shown below:

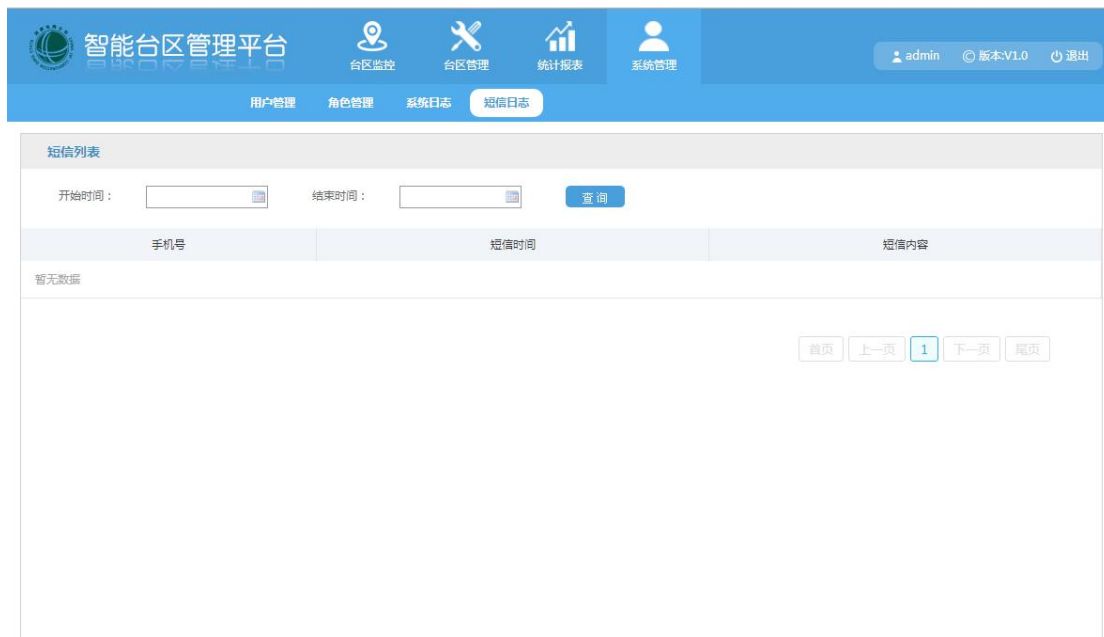


◆ **To set the role:** click the role information "Set" button, the tree diagram menu will pop up, tick the menu that needs to be allocated and save, the specific interface is as follows:



2.4.3 SMS Log

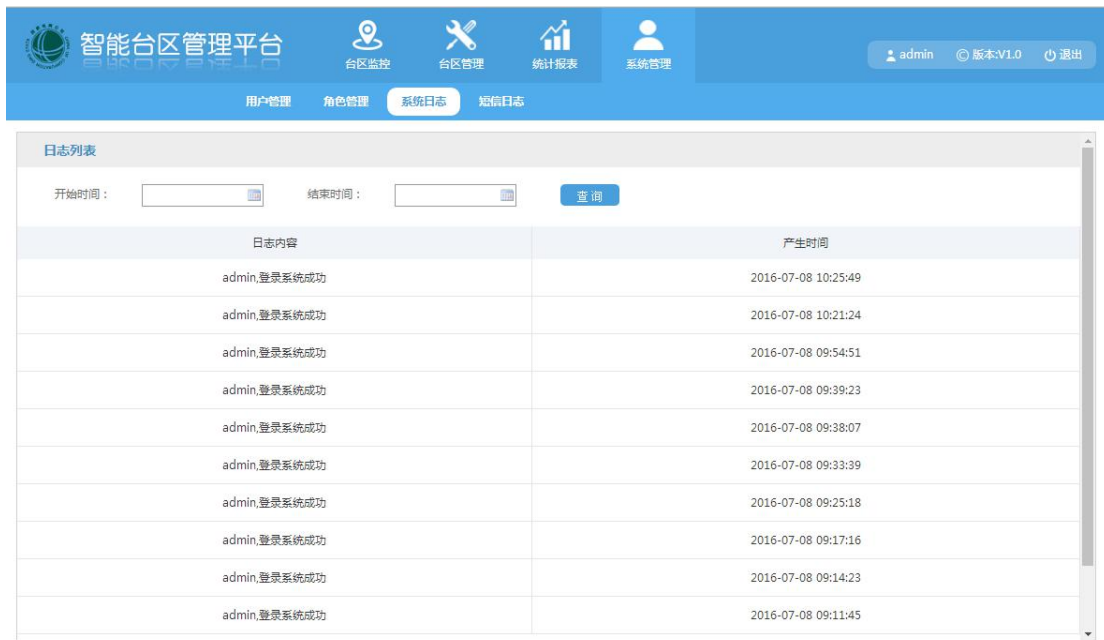
◇ **SMS list:** mobile phone numbers, time of the sent message, SMS content, as shown below:



◇ **SMS Query:** according to the time, monitored area, and mobile phone number to query the SMS record.

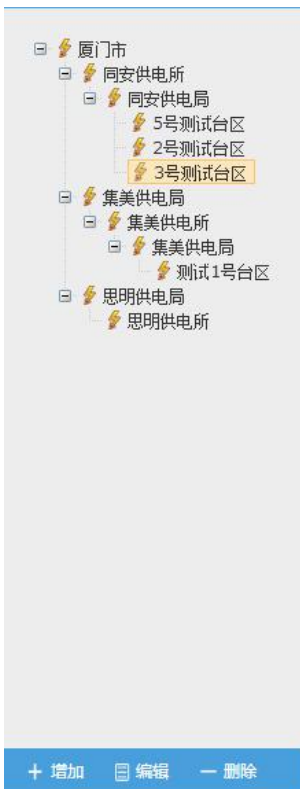
2.4.4 System Log

◇ **System log list:** the system log list contains the contents of the log, and log generation time, as shown below:

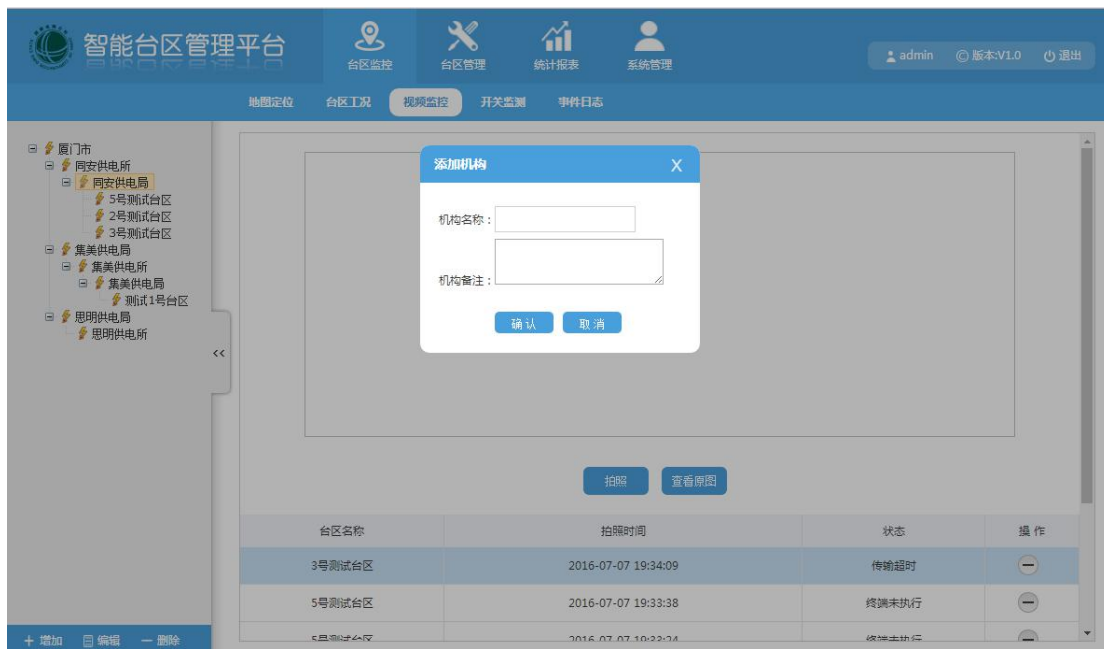


2.4.5 Institution Management

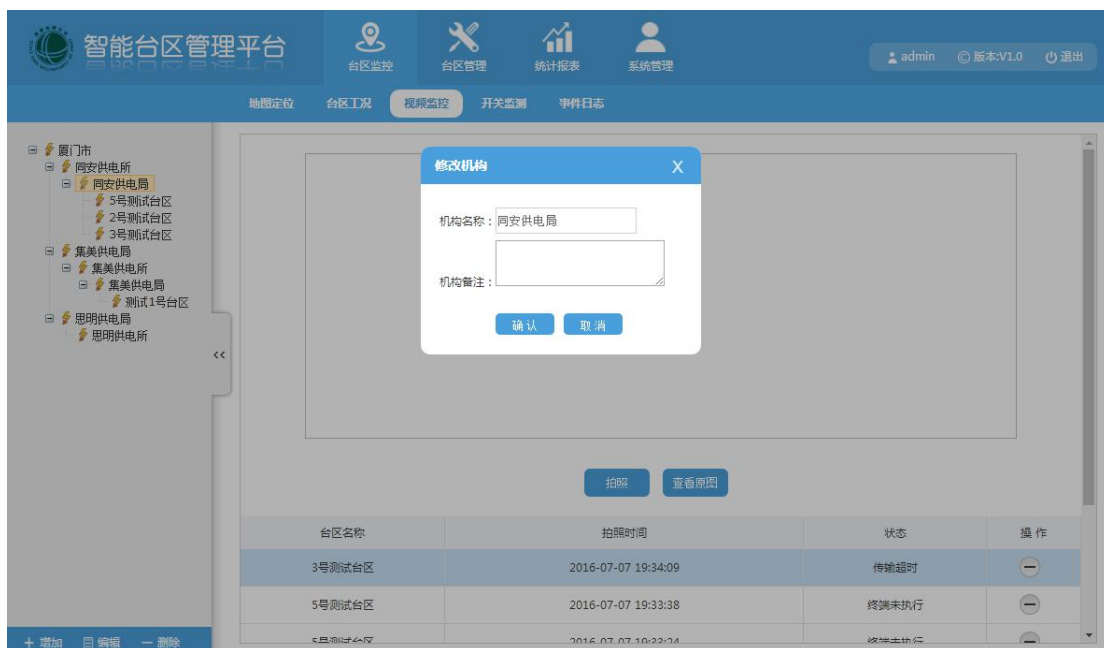
Institution tree diagram: following is the institution tree diagram.



◆ **To add institutions:** select the institution, click the "Add" button and pop up the institution form, fill in the relevant information and save, as shown below:



◆ **To edit institution information:** select the institution, click the "Edit" button, institution form will pop up, then modify the relevant information and save, as shown below:



◆ **To delete the institution:** select the institution that need to be deleted, click the "Delete" button, then the successfully delete tips will pop up, as shown below:



2.5 Report Statistics

2.5.1 Leakage Residual Current Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.5.2 Electricity Voltage Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.5.3 Active Power Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.5.4 Reactive Power Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.5.5 Temperature Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.5.6 Load Rate Report

Select the monitored area on the left and the report generation time, details about generating the report are as follows:



2.6 APP Instruction

2.6.1 Login



Open APP of monitored area, user need to log on, and the default account and password are admin/123546.

2.6.2 Main Menu



When the login is successful, the six main menus' functions are displayed on the page.

2.6.3 Monitored Area Working Condition



Slide to the left side and select the monitored area, then the relevant data will show on the page of monitored area working condition.

The data mainly includes three-phase current, current, voltage, active and reactive power.

2.6.4 Operating Parameters



By sliding to the left and select monitored area, the relevant operating parameters of monitored area will show on the page.

2.6.5 System Settings



Through the settings of the system functions, user can change the password and view the system version.

2.6.6 Alarm

Shows today's alarm record.