

User Manual of Management System in Smart Power Distribution Area	File No.	Product Version	Page
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User Manual of Management System in Smart Power Distribution Area



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Content

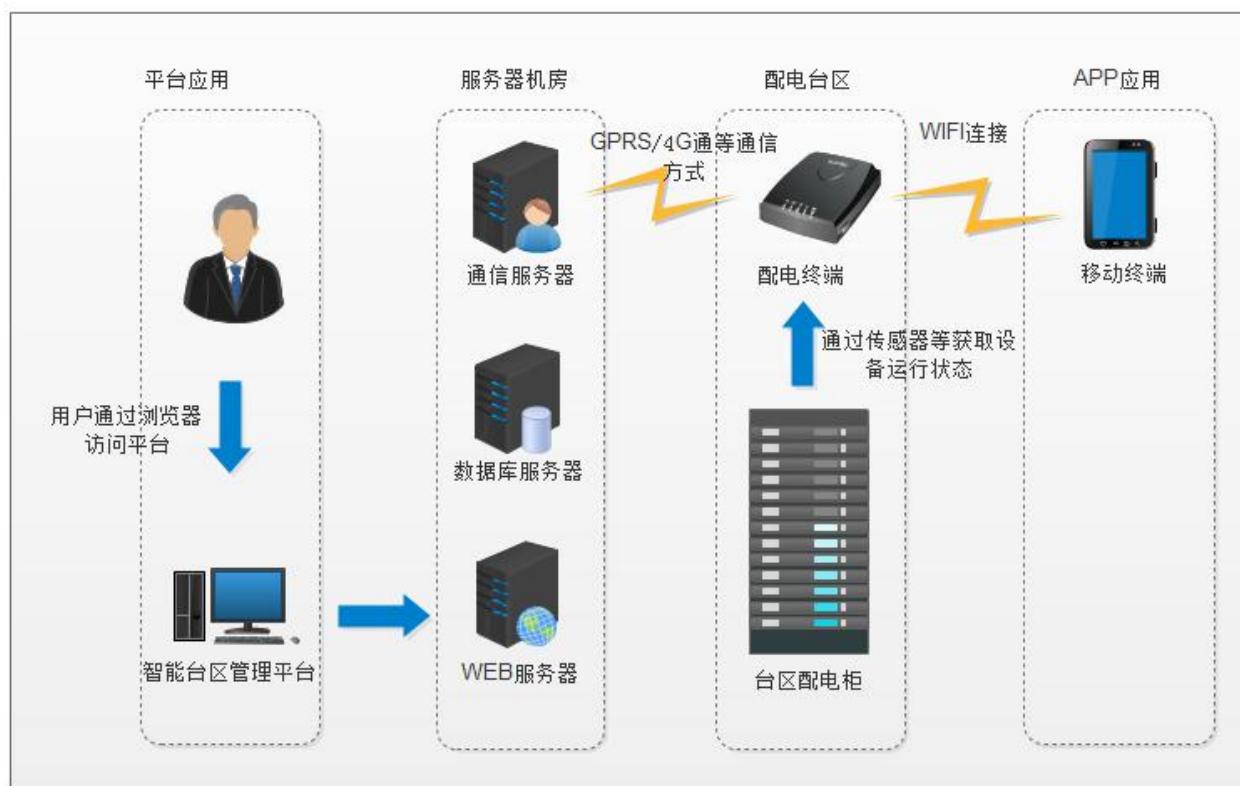
Chapter 1 Introduction of the Management System.....	4
1.1 General.....	4
1.2 Topology of System Network.....	4
Chapter 2 Functions Introduction.....	5
2.1 Login.....	5
2.2 Map Positioning.....	6
2.2.1 Working Condition of Monitored Area.....	6
2.2.2 Switch Monitoring.....	8
2.2.3 Even Log.....	9
2.2.4 Video Surveillance.....	9
2.3 Management of the Monitored Area.....	10
2.3.1 Terminal Management.....	10
2.3.2 Transformer management.....	13
2.3.3 Analog Signal Management.....	15
2.3.4 Switch Management.....	17
2.3.5 Management of Remote Communication Data.....	20
2.3.6 Information of Monitored Area.....	22
2.4 System Management.....	24
2.4.1 User Management.....	24
2.4.2 Role Management.....	26
2.4.3 SMS Log.....	28
2.4.4 System Log.....	28
2.4.5 Institution Management.....	29
2.5 Report Statistics.....	31
2.5.1 Leakage Residual Current Report.....	31
2.5.2 Electricity Voltage Report.....	32
2.5.3 Active Power Report.....	32
2.5.4 Reactive Power Report.....	33
2.5.5 Temperature Report.....	33
2.5.6 Load Rate Report.....	33
2.6 App Instruction	34
2.6.1 Login.....	34
2.6.2 Main Menu.....	35
2.6.3 Monitored Area Working Condition.....	35
2.6.4 Operating Parameters.....	36
2.6.5 System Settings.....	36
2.6.6 Alarm.....	36

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

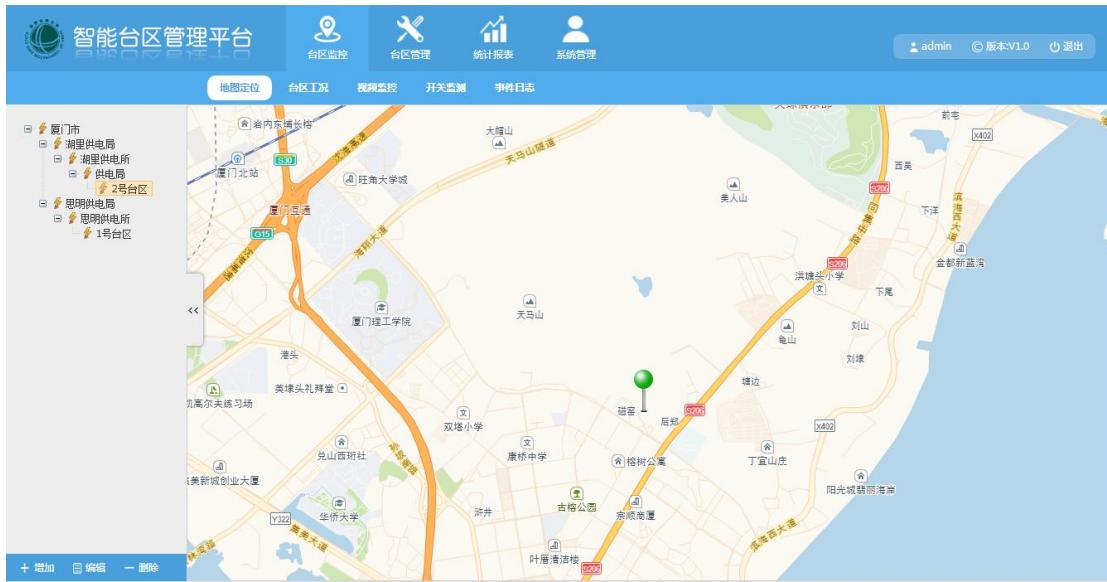
2.1 Login

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:

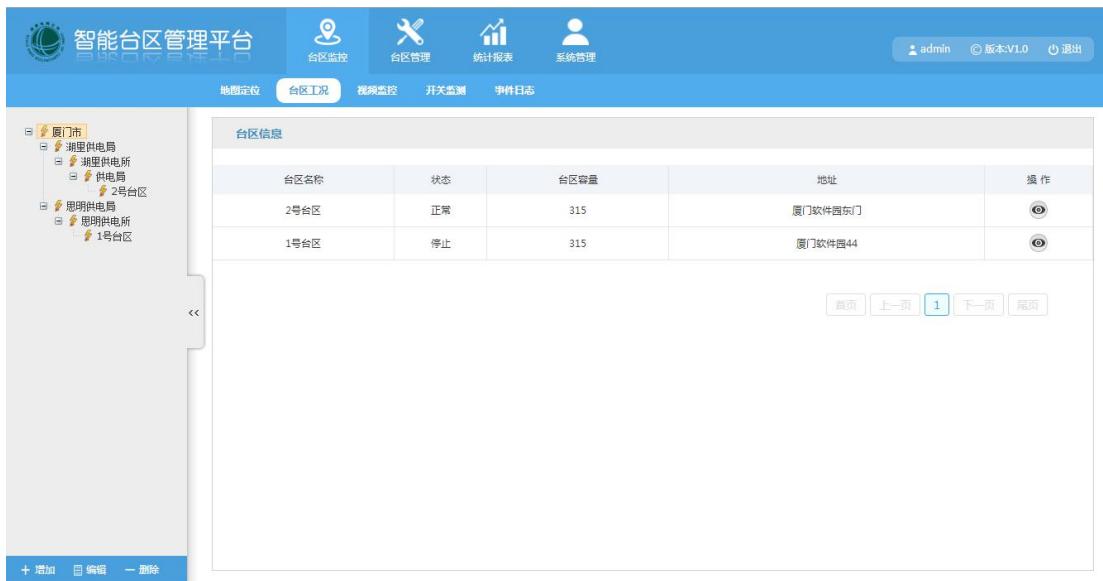


Select the information on left tree diagram, it will show the located monitored area. Green markings are the normal operating districts, and the red markings mean that the monitored areas are stop working.

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:



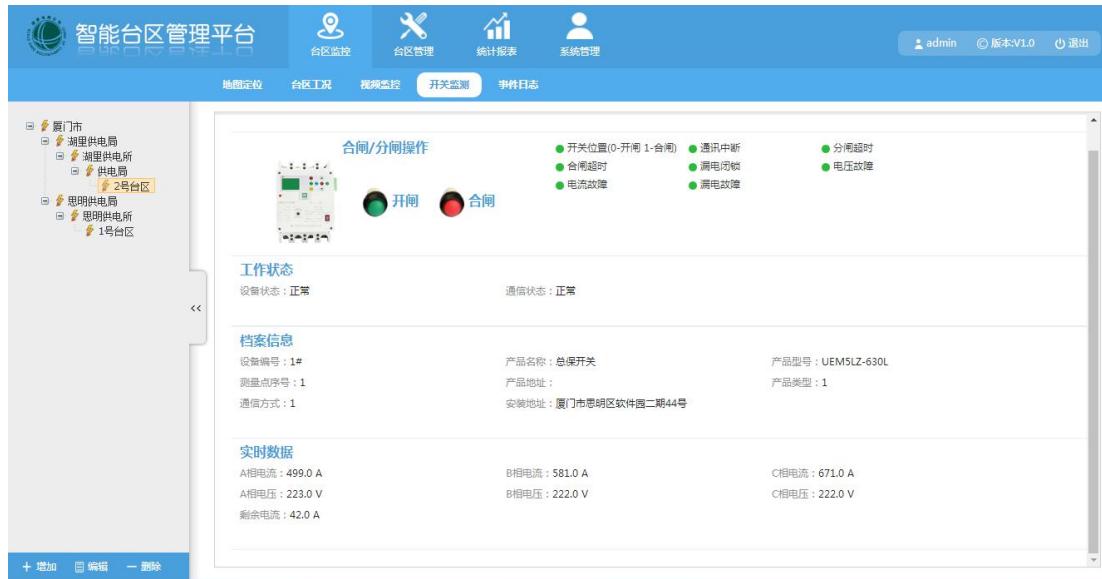
台区名称	状态	台区容量	地址	操作
2号台区	正常	315	厦门软件园东门	
1号台区	停止	315	厦门软件园44	

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:



$I_a(A)$: 468	$U_a(V)$: 223
$I_b(A)$: 549	$U_b(V)$: 222
$I_c(A)$: 631	$U_c(V)$: 223
$T(^\circ C)$: 38	$P(kW)$: 287
$H(%)$: 50	$Q(kVar)$: 211

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.

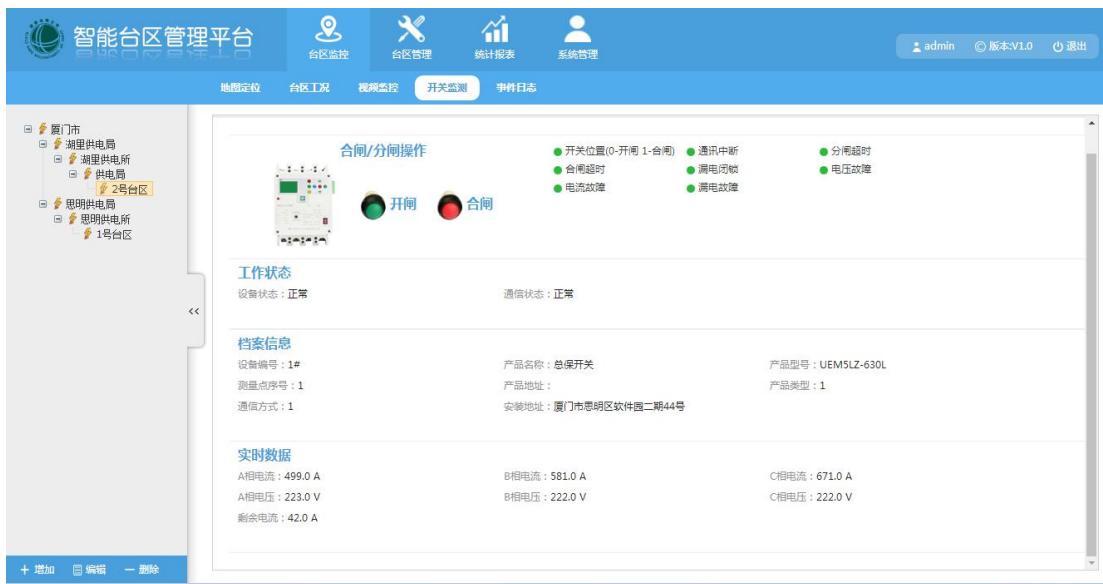
2.2.2 Switch Monitoring

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



The screenshot shows the 'Switch Monitoring' section of the management system. On the left, there's a tree view of power supply areas: 厦门市 (Xiamen City) with 湖里供电局 (Huili Power Supply Bureau), 湖里供电所 (Huili Power Supply Office), 供电局 (Power Supply Bureau), and 2号台区 (Area 2). Below it is 思明供电局 (Siming Power Supply Bureau) and 思明供电所 (Siming Power Supply Office), with 1号台区 (Area 1). In the center, there's a table titled '开关信息' (Switch Information) listing three switches: 1# (总保开关, UEM5LZ-630L, 所属端口 1, 额定电流 1, 操作), 2# (一级开关1, UEM5LZ-630L, 所属端口 2, 额定电流 1, 操作), and 3# (一级开关2, UEM5LZ-630L, 所属端口 3, 额定电流 1, 操作). At the bottom of the table, there are navigation buttons: 首页 (Home), 上一页 (Previous), 1 (Current page), 下一页 (Next), 尾页 (Last).

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

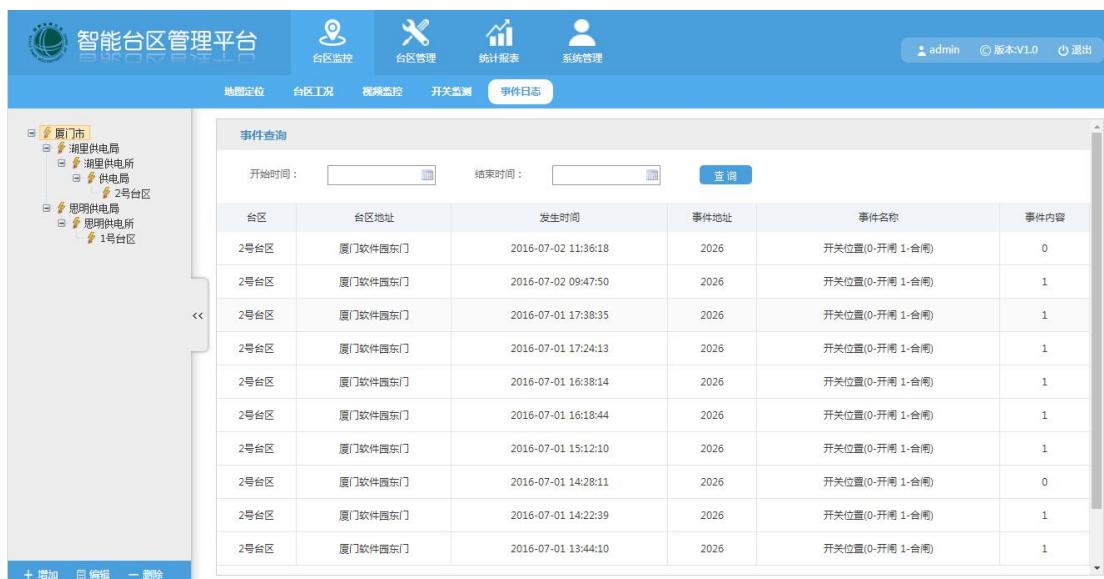


2.2.3 Event Log

◇ **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.

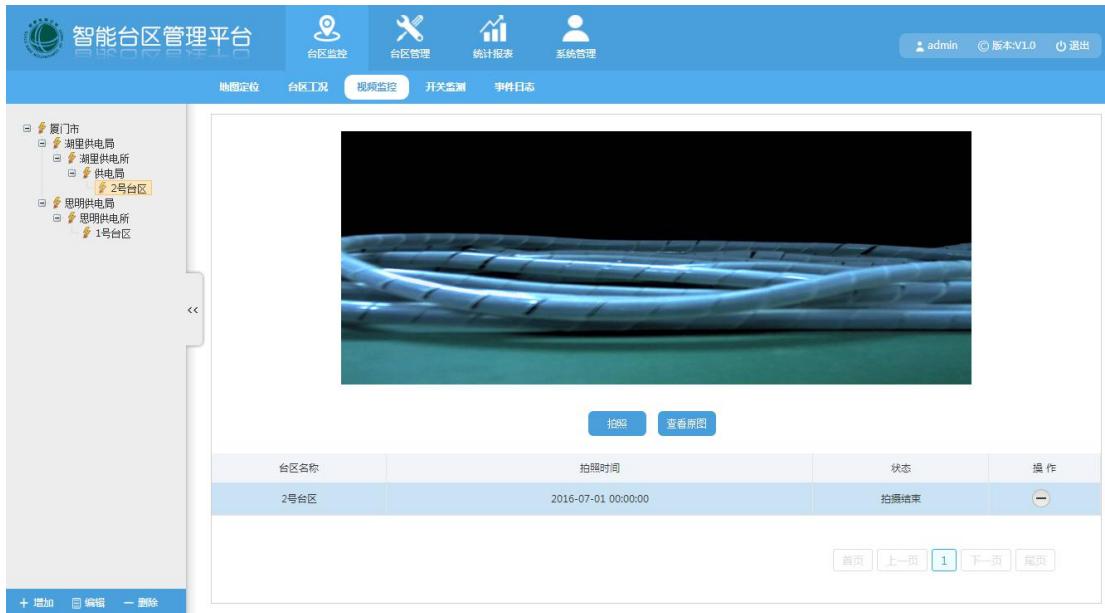
◇ **Event List:** display area address, sent time, event address and event content.

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



2.2.4 Video Surveillance

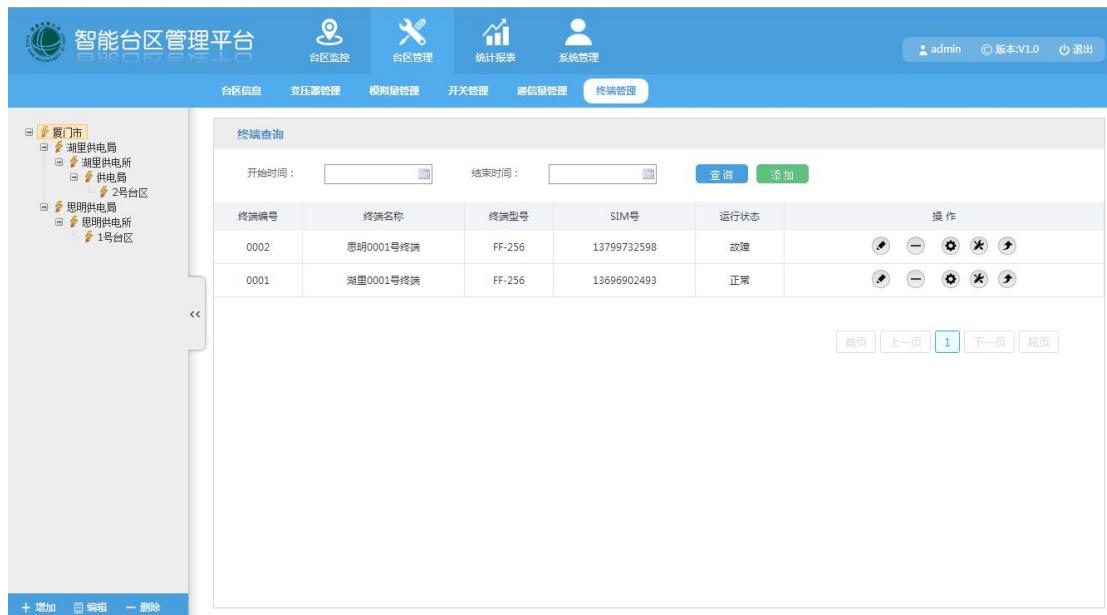
Select the monitored area on the left tree diagram, click the “Camera” button on the right, then the camera instruction will be sent, when shooting successful,it shows in the photo area, and the photo shooting record will be saved in the database.The details are as follows:



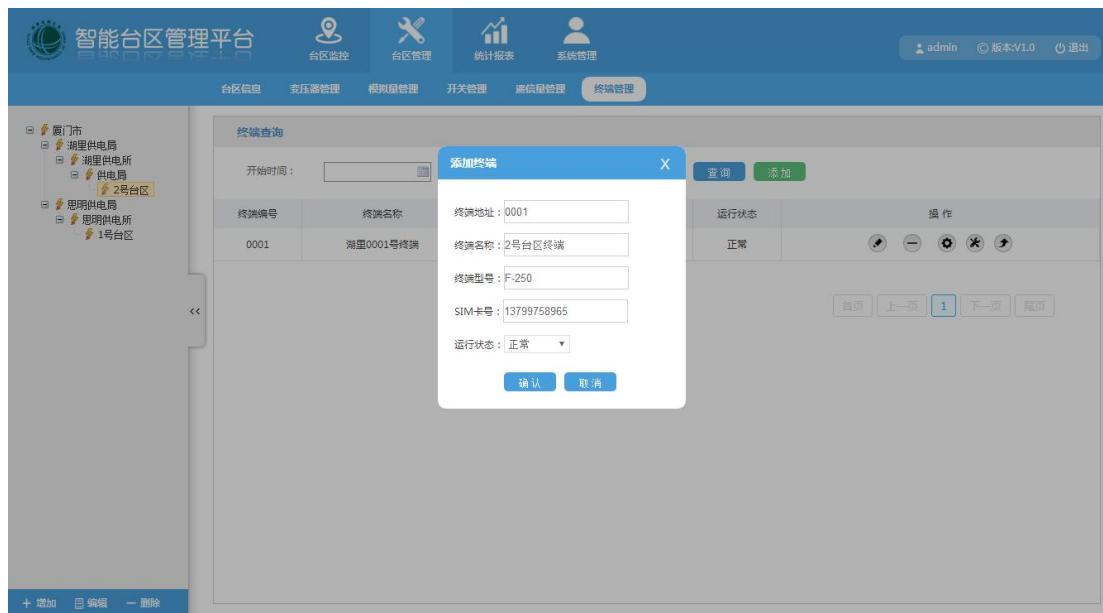
2.3 Management of the Monitored Area

2.3.1 Terminal Management

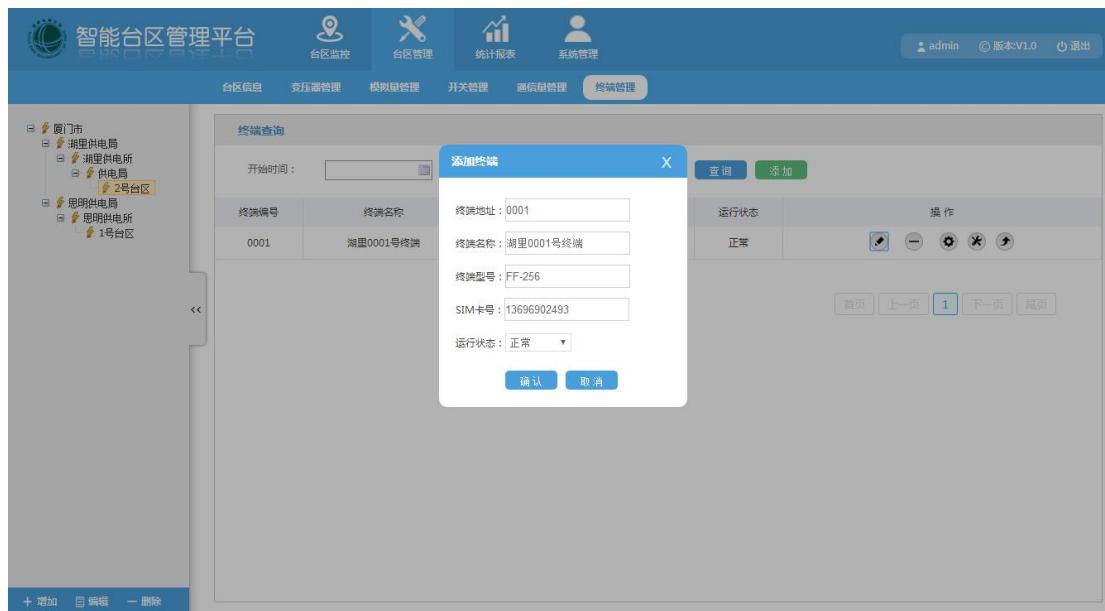
◆ **Equipment file:** terminal list contains the terminal name, terminal number, terminal model, SIM card number, and running status (0:normal;1:fault). As shown below:



◆ **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:



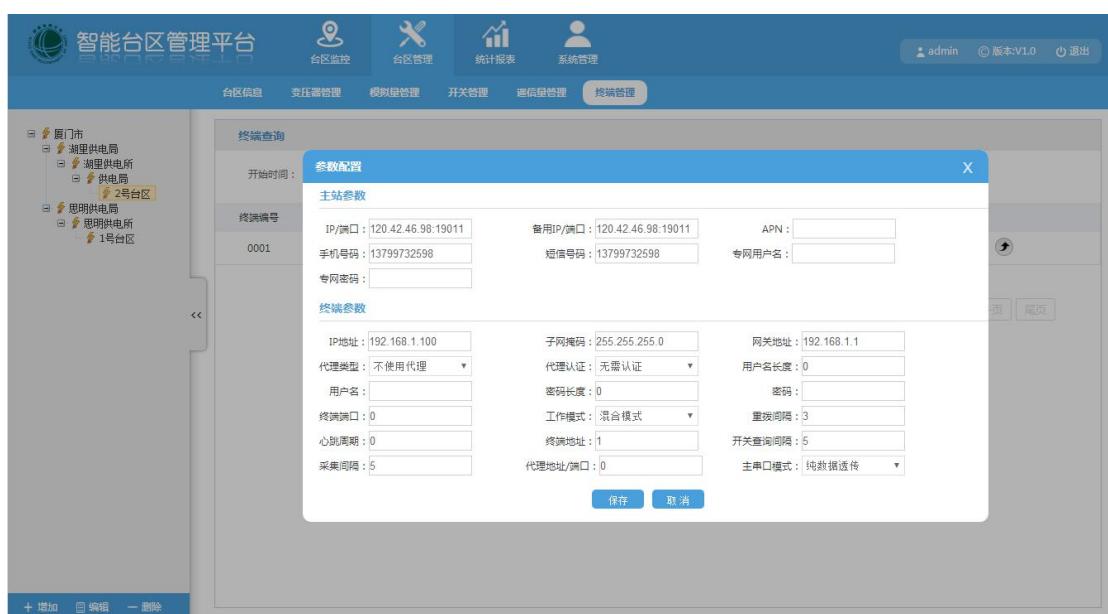
◆ **To edit the terminal:** select the terminal information in the terminal list, click the “Edit” button, the terminal form pop up, then fill in the relevant information and save, as shown below:



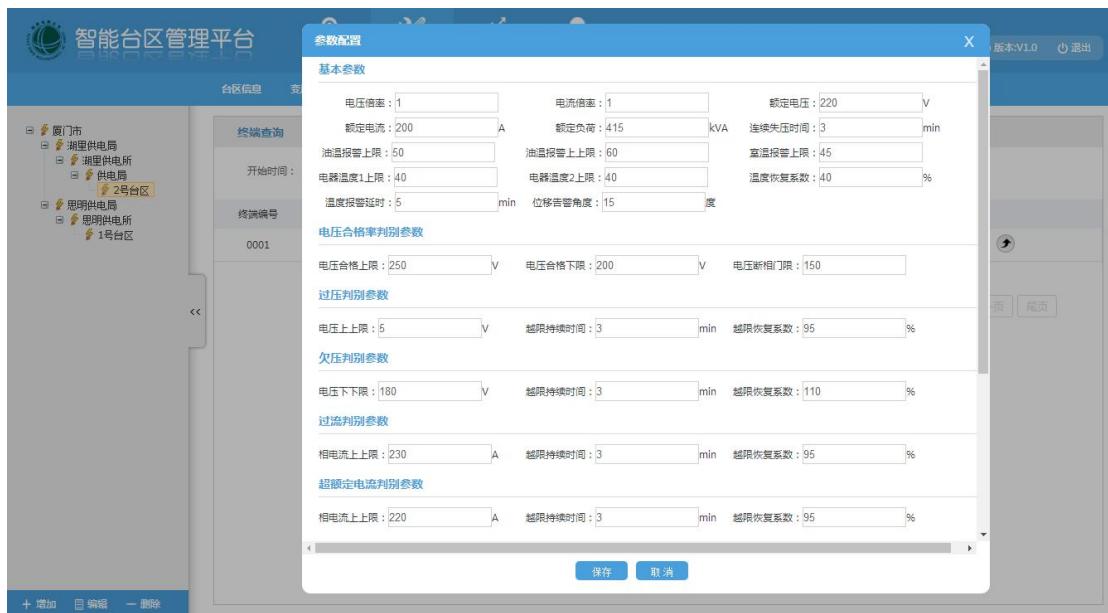
◆ **To delete the terminal:** click the “Delete” icon in the terminal list to confirm whether to delete the data or not, as shown below:



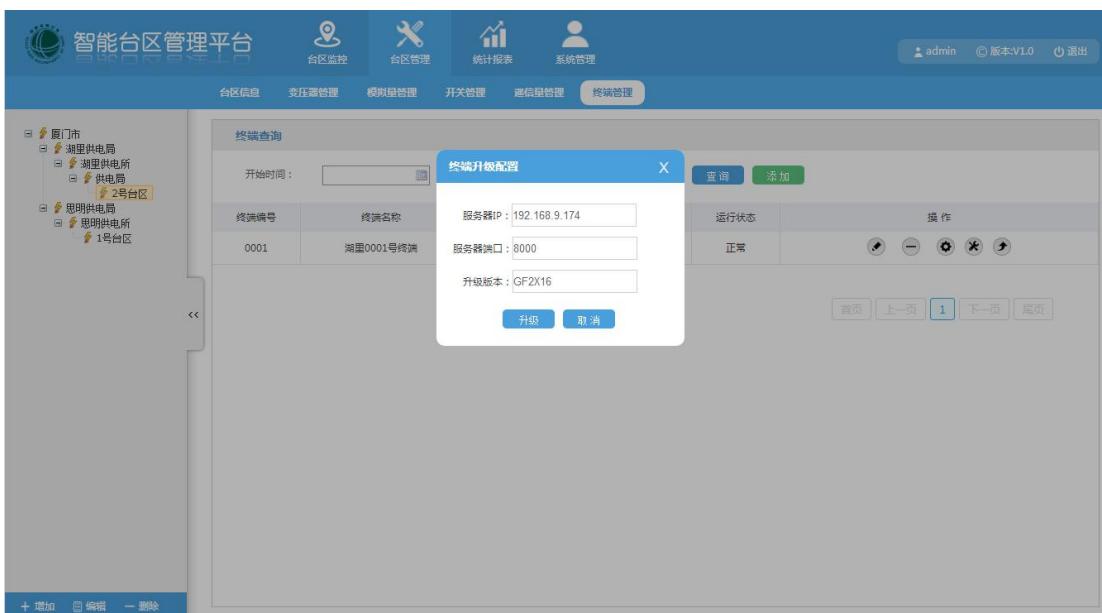
◆ **Terminal parameters:** to achieve the remote modification of terminal parameters, as shown below:



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

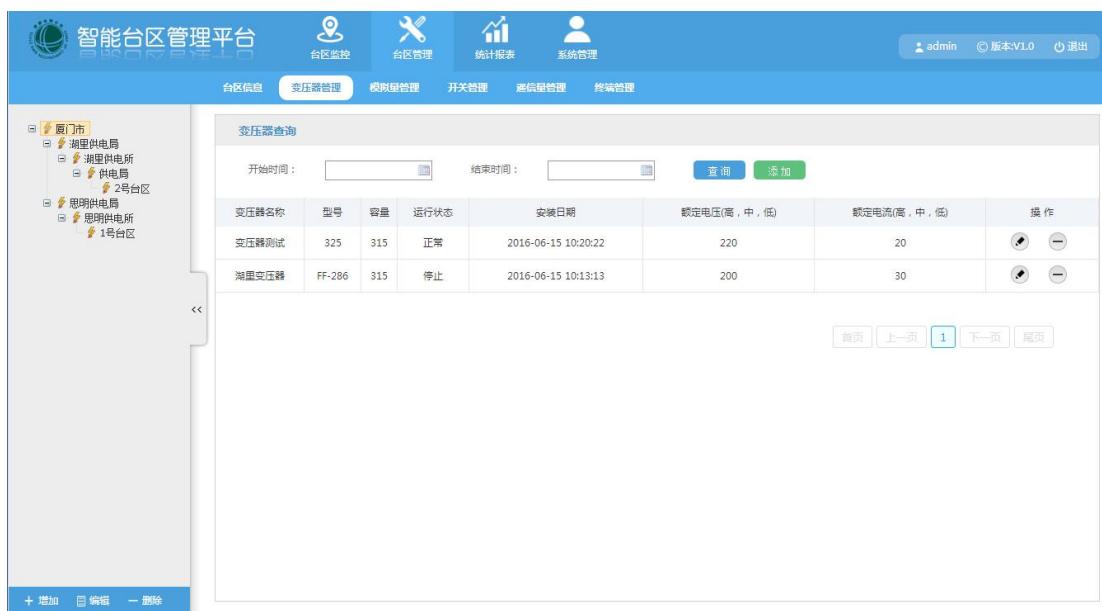


◆ **Terminal upgrade:** to achieve remote upgrade function, and fill in the relevant parameters as follows:



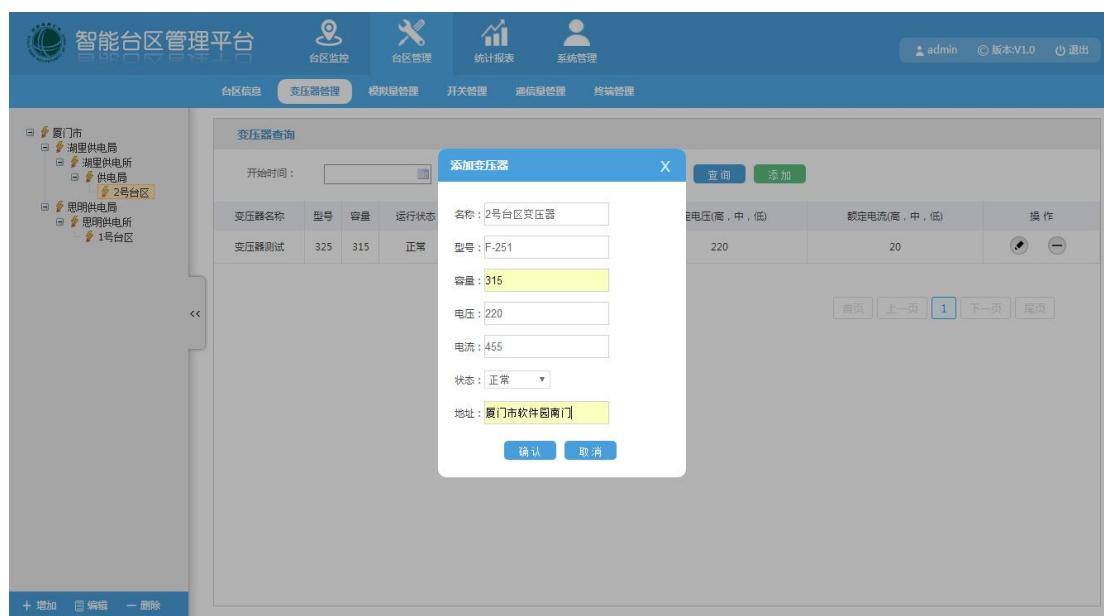
2.3.2 Transformer management

◆ **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:

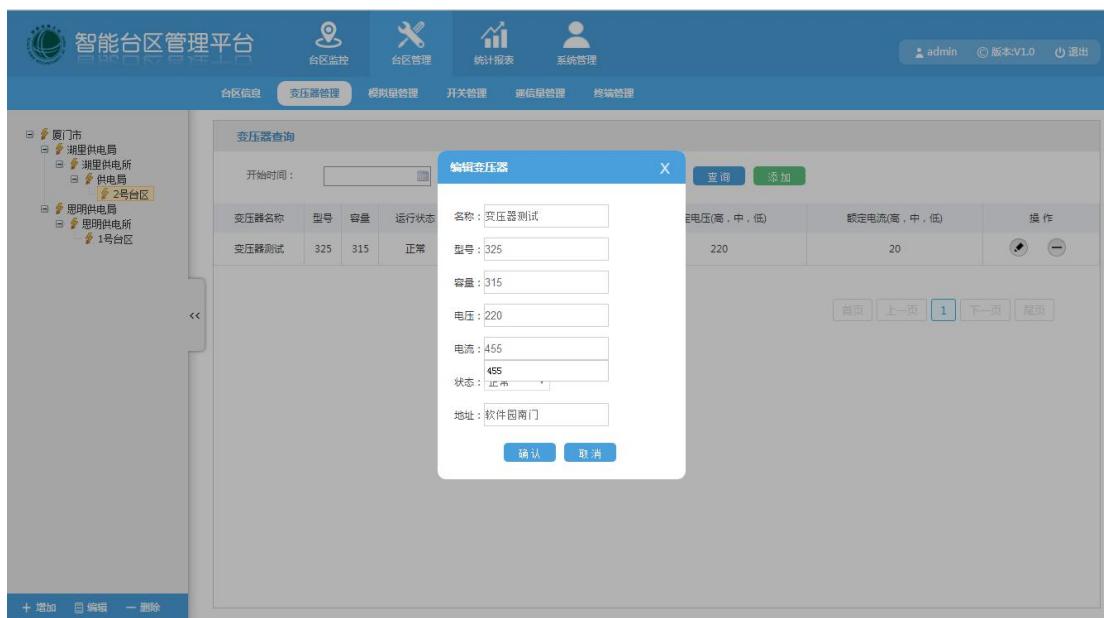


变压器查询							
开始时间:		结束时间:		查询		添加	
变压器名称	型号	容量	运行状态	安装日期	额定电压(高, 中, 低)	额定电流(高, 中, 低)	操作
变压器测试	325	315	正常	2016-06-15 10:20:22	220	20	
湖里变压器	FF-286	315	停止	2016-06-15 10:13:13	200	30	

◆ 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:

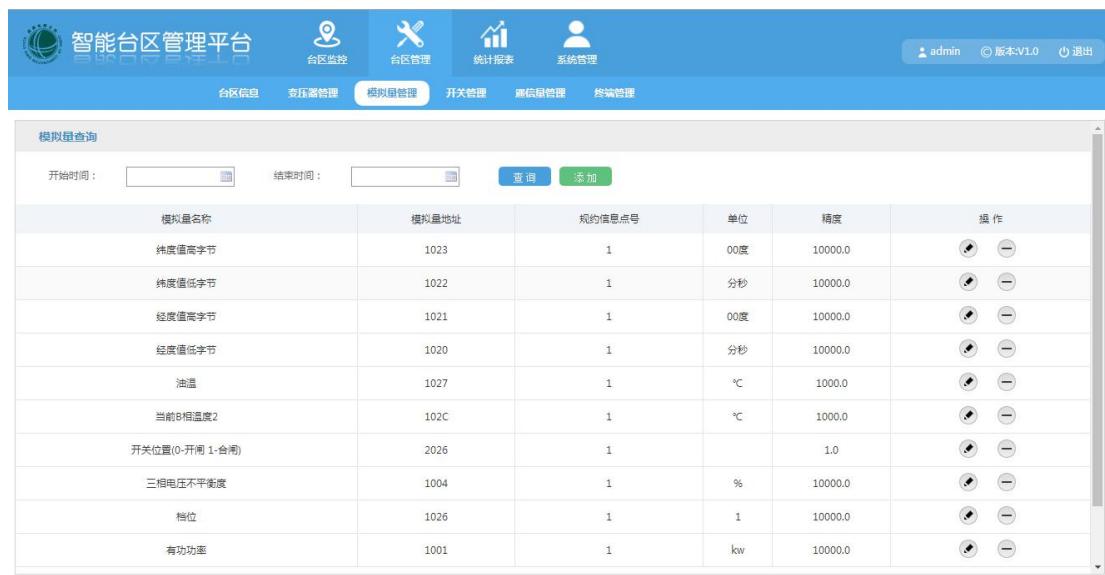


◆ **To remove the transformer:** click the “Delete” icon in the transformer list and confirm whether to delete the data or not, as shown below:



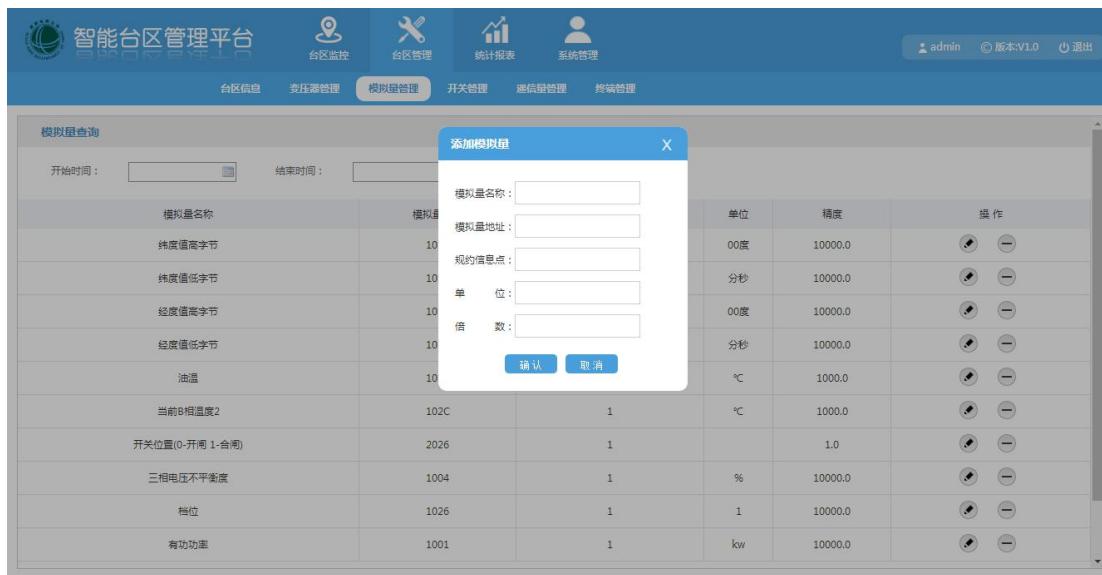
2.3.3 Analog Signal Management

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



模拟量名称	模拟量地址	规约信息点号	单位	精度	操作
纬度值高字节	1023	1	00度	10000.0	
纬度值低字节	1022	1	分秒	10000.0	
经度值高字节	1021	1	00度	10000.0	
经度值低字节	1020	1	分秒	10000.0	
油温	1027	1	°C	1000.0	
当前B相温度2	102C	1	°C	1000.0	
开关位置(0-开闸 1-合闸)	2026	1		1.0	
三相电压不平衡度	1004	1	%	10000.0	
档位	1026	1	1	10000.0	
有功功率	1001	1	kW	10000.0	

◆ 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:



开始时间 : 结束时间 :

模拟量名称	模拟量地址	规约信息点号	单位	精度	操作
纬度值高字节	10		00度	10000.0	
纬度值低字节	10		分秒	10000.0	
经度值高字节	10		00度	10000.0	
经度值低字节	10		分秒	10000.0	
油温	10		°C	1000.0	
当前B相温度2	102C	1	°C	1000.0	
开关位置(0-开闸 1-合闸)	2026	1		1.0	
三相电压不平衡度	1004	1	%	10000.0	
档位	1026	1	1	10000.0	
有功功率	1001	1	kW	10000.0	

◆ 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:

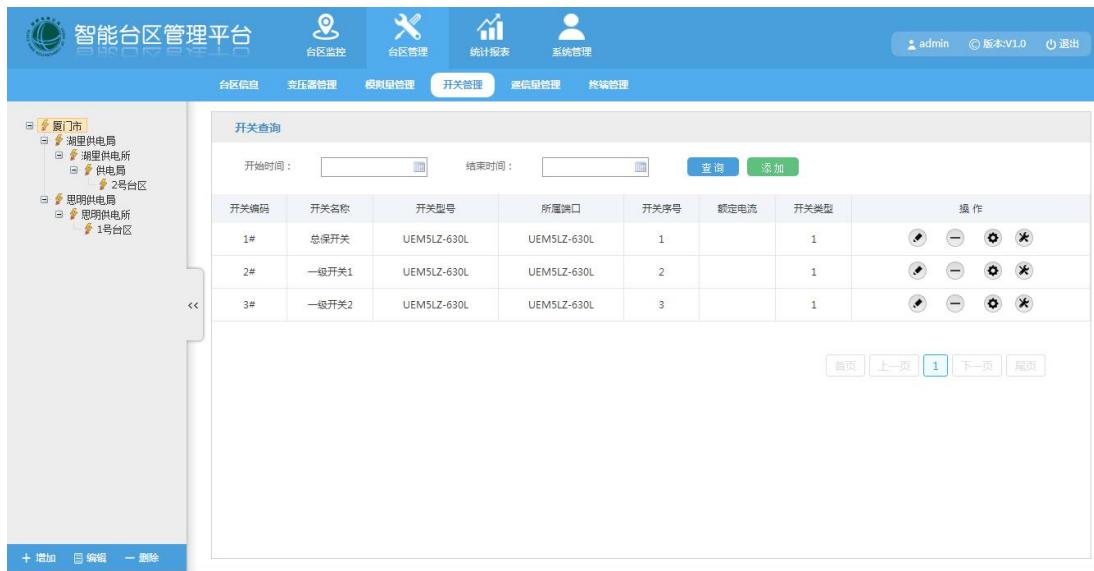


◆ To delete the analog signal: click the “Delete” icon in the analog signal list and confirm whether to delete the information or not, as shown below:



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:



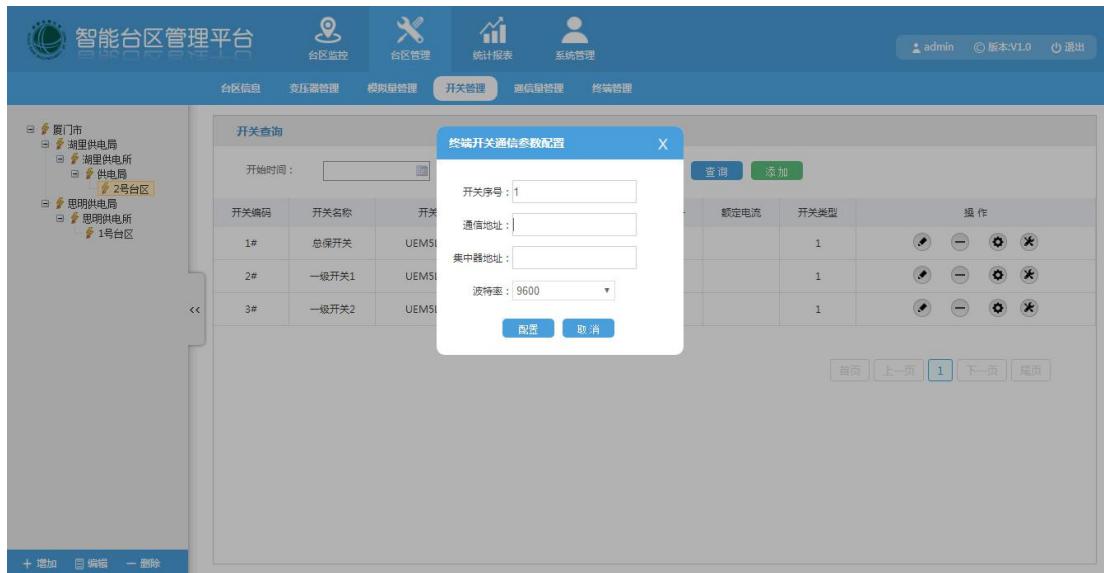
◆ **To delete protection switch:** click the “Delete” icon in the protection switch list and confirm whether to delete the information or not, as shown below:



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

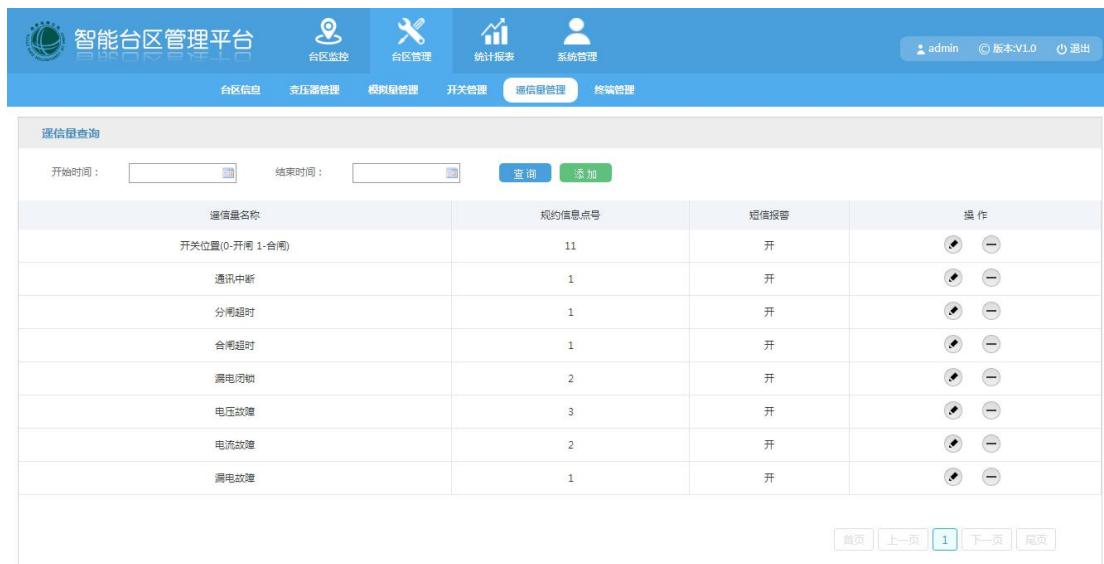


◆ **Terminal switch parameters:** click on the “Set” button in the protection switch list to load the real-time terminal switch parameters, as shown below:



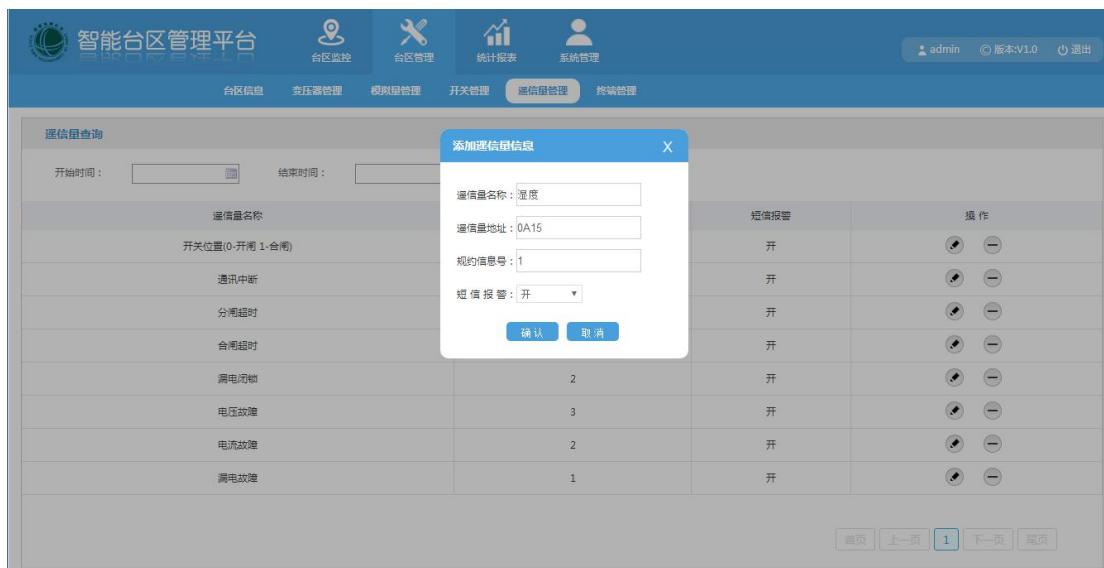
2.3.5 Management of Remote Communication Data

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



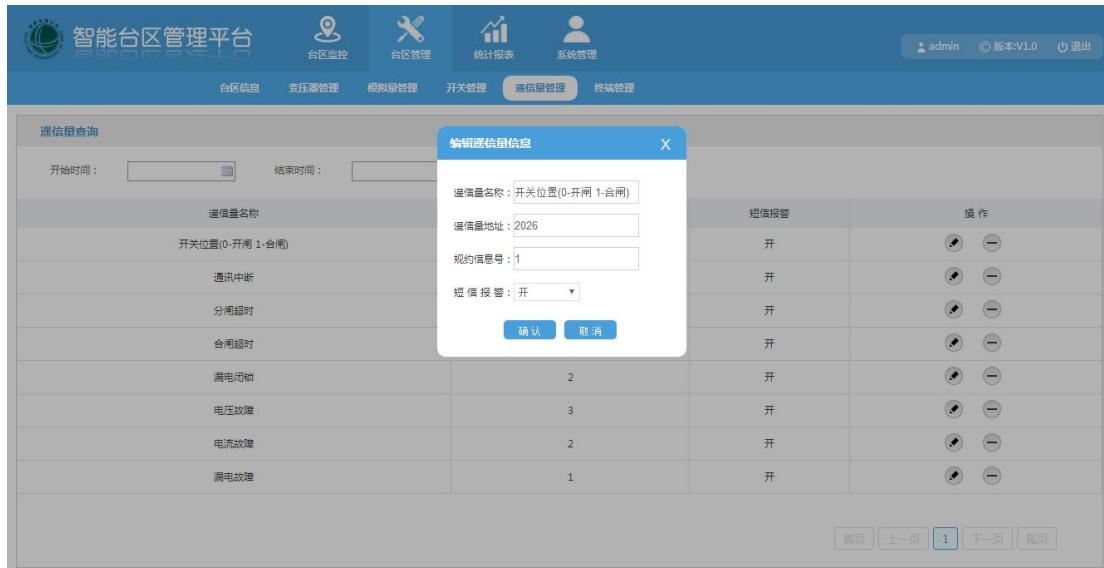
通信量名称	规约信息点号	短信报警	操作
开关位置(0-开 1-合)	11	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
通讯中断	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
分闸超时	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
合闸超时	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
漏电闭锁	2	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
电压故障	3	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
电流故障	2	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
漏电故障	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>

◆ 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:



通信量名称	规约信息点号	短信报警	操作
湿度	0A15	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
通讯中断	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
分闸超时		开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
合闸超时		开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
漏电闭锁	2	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
电压故障	3	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
电流故障	2	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>
漏电故障	1	开	<input type="button" value="编辑"/> <input type="button" value="删除"/>

◆ 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:

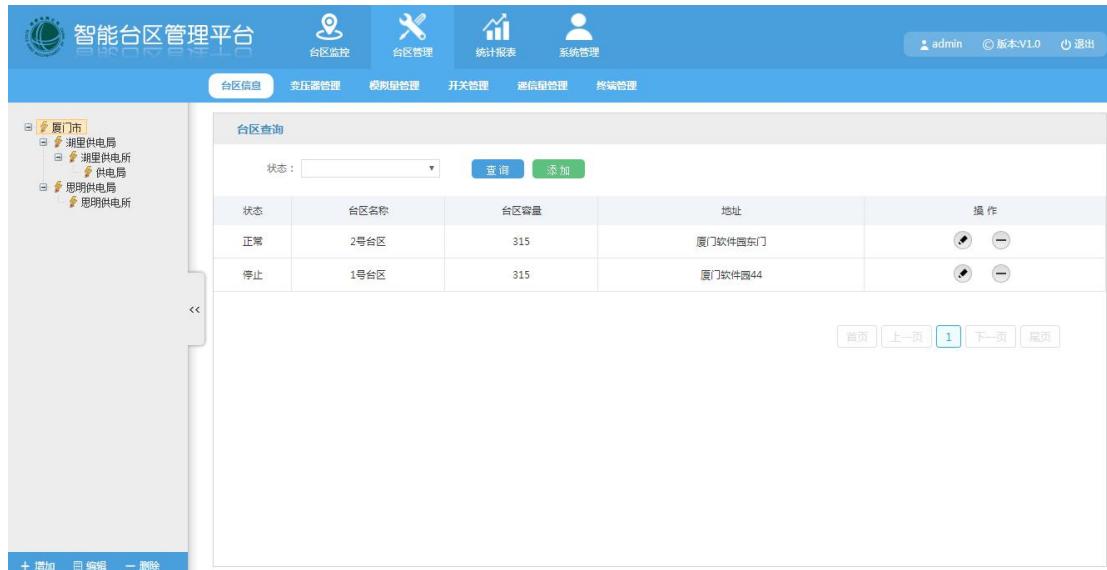


◆ **To delete the remote communication data type:** click the “Delete” icon in the remote communication data type list to confirm whether to delete the information or not, as shown below:



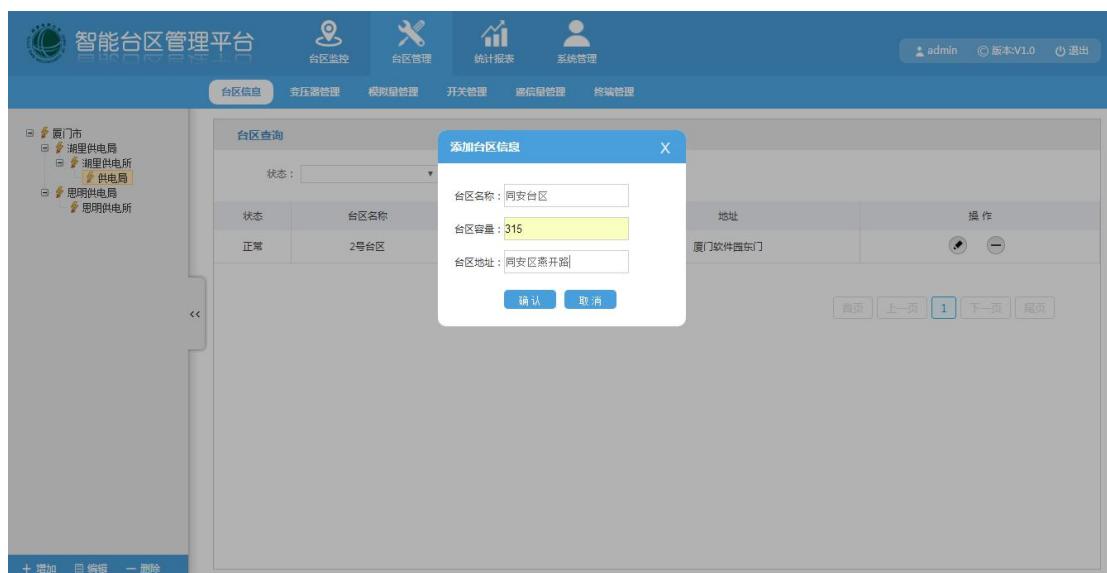
2.3.6 Information of Monitored Area

◆ **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:

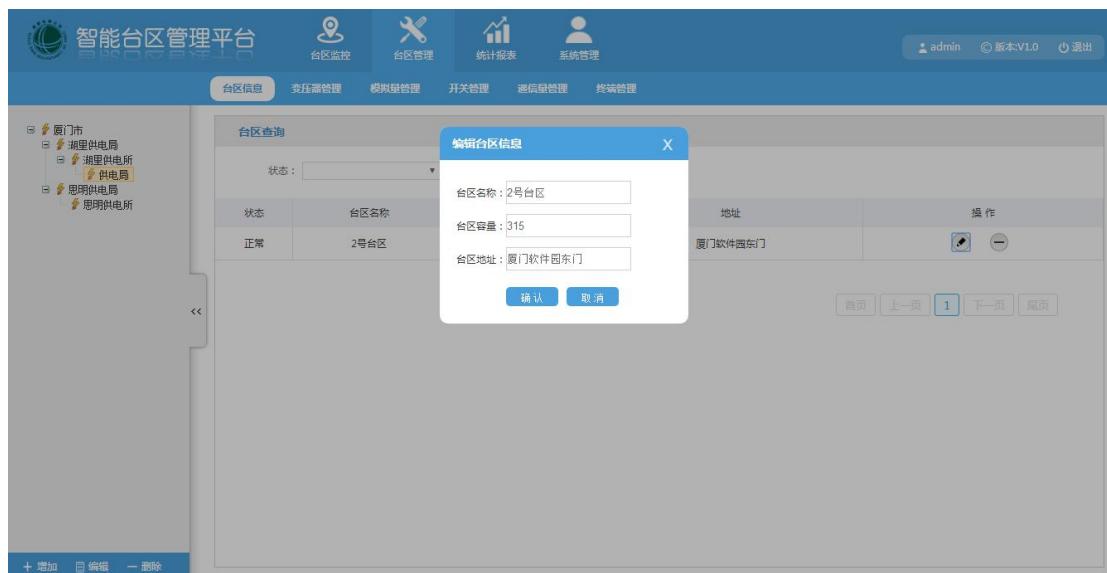


状态	台区名称	台区容量	地址	操作
正常	2号台区	315	厦门软件园东门	
停止	1号台区	315	厦门软件园44	

◆ 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

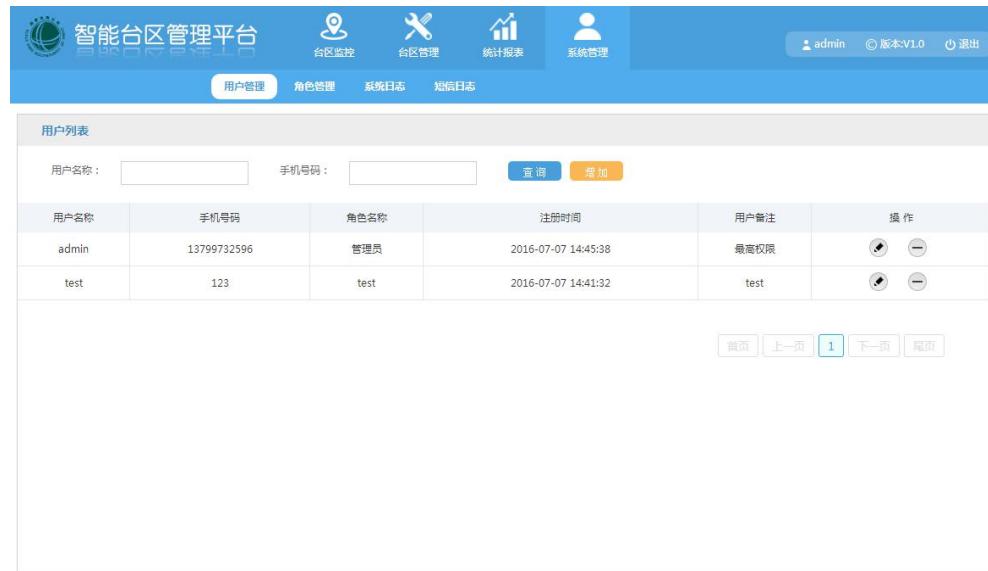
the monitored area: click the “Delete” icon in the list of monitored area to confirm whether to delete the information or not, as shown below:



2.4 System Management

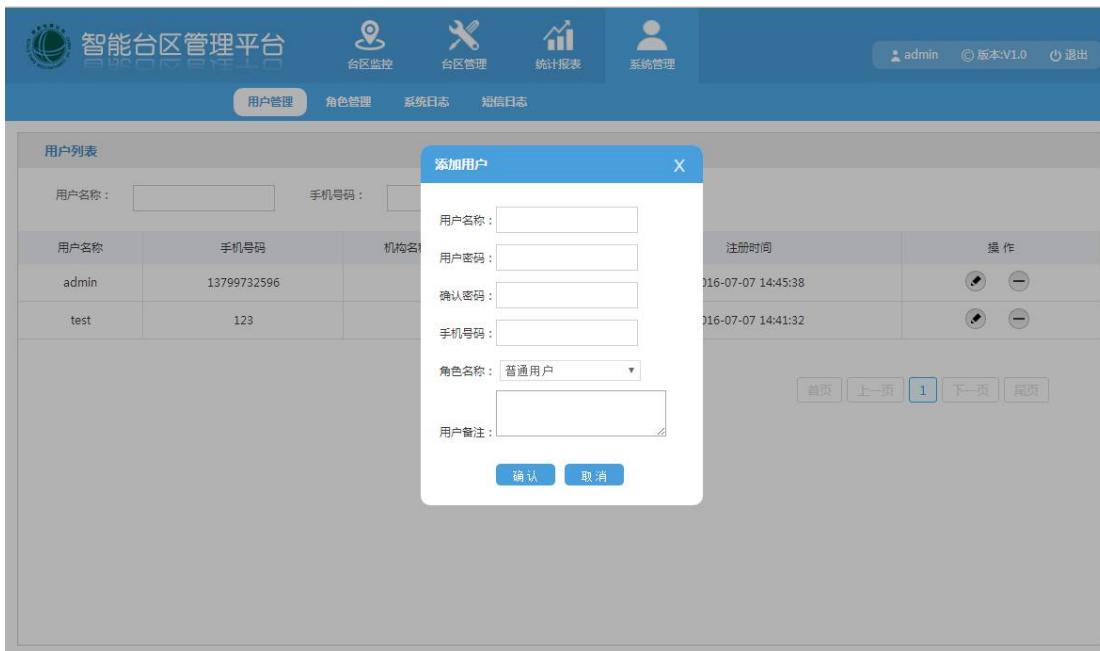
2.4.1 User Management

◆ **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:

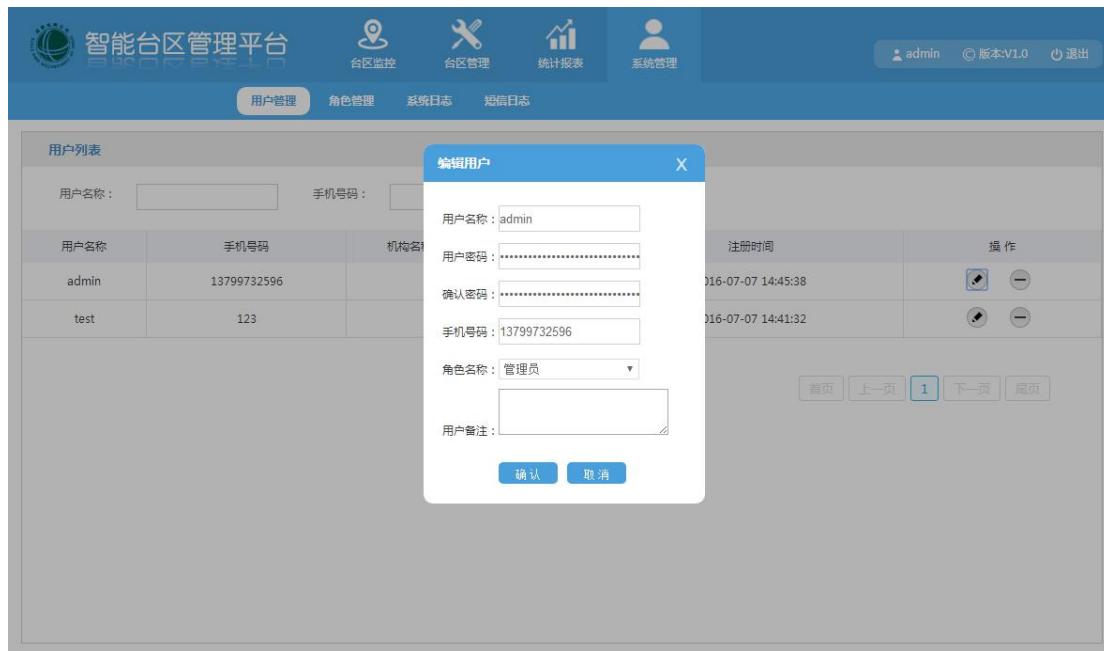


用户名	手机号码	角色名称	注册时间	用户备注	操作
admin	13799732596	管理员	2016-07-07 14:45:38	最高权限	
test	123	test	2016-07-07 14:41:32	test	

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

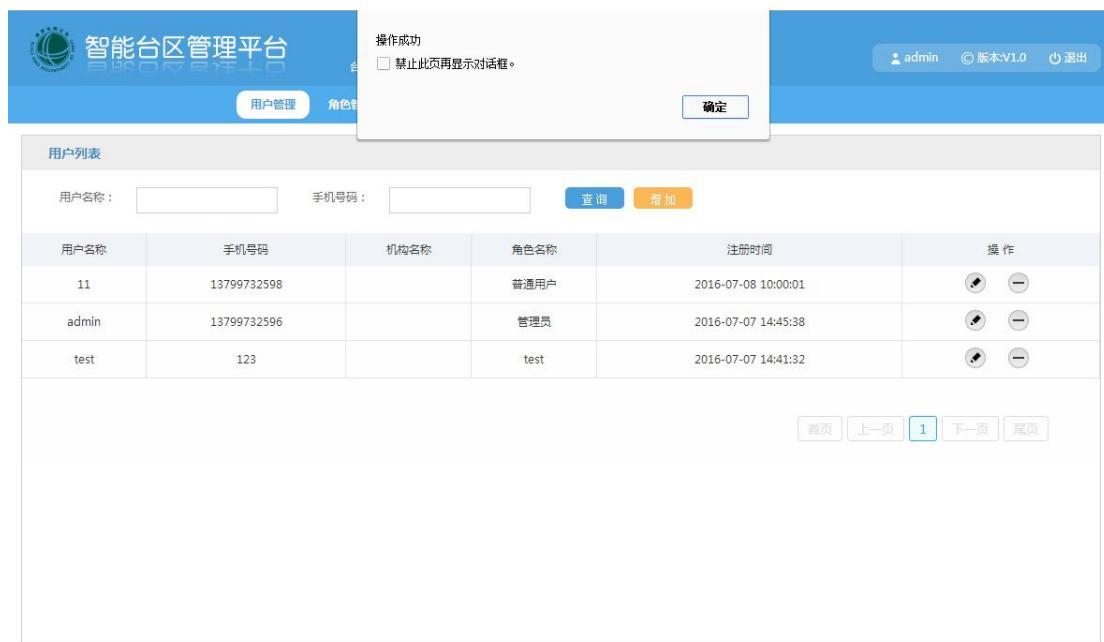


◆ **To Edit the User:** select the existing user information, click the "Edit" button and pop up the user form to update the user information and save, as shown below:



用户名	手机号码	机构名称	角色名称	注册时间	操作
admin	13799732596			2016-07-07 14:45:38	
test	123		管理员	2016-07-07 14:41:32	

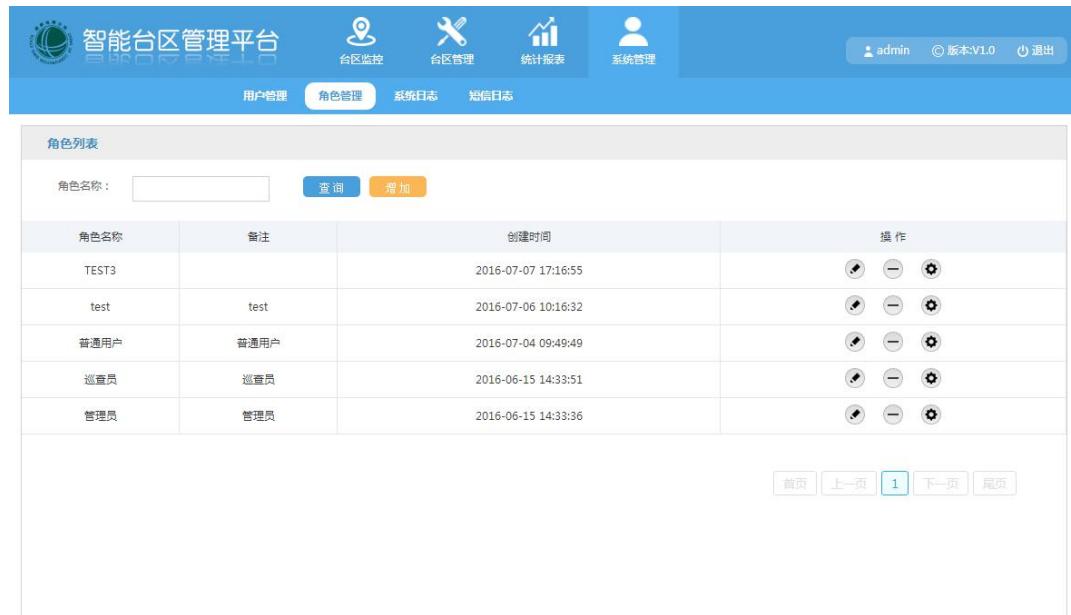
◆ **To Delete the User:** select the user information and click the "Delete" button to delete the information, as shown below:



用户名	手机号码	机构名称	角色名称	注册时间	操作
11	13799732598		普通用户	2016-07-08 10:00:01	
admin	13799732596		管理员	2016-07-07 14:45:38	
test	123		test	2016-07-07 14:41:32	

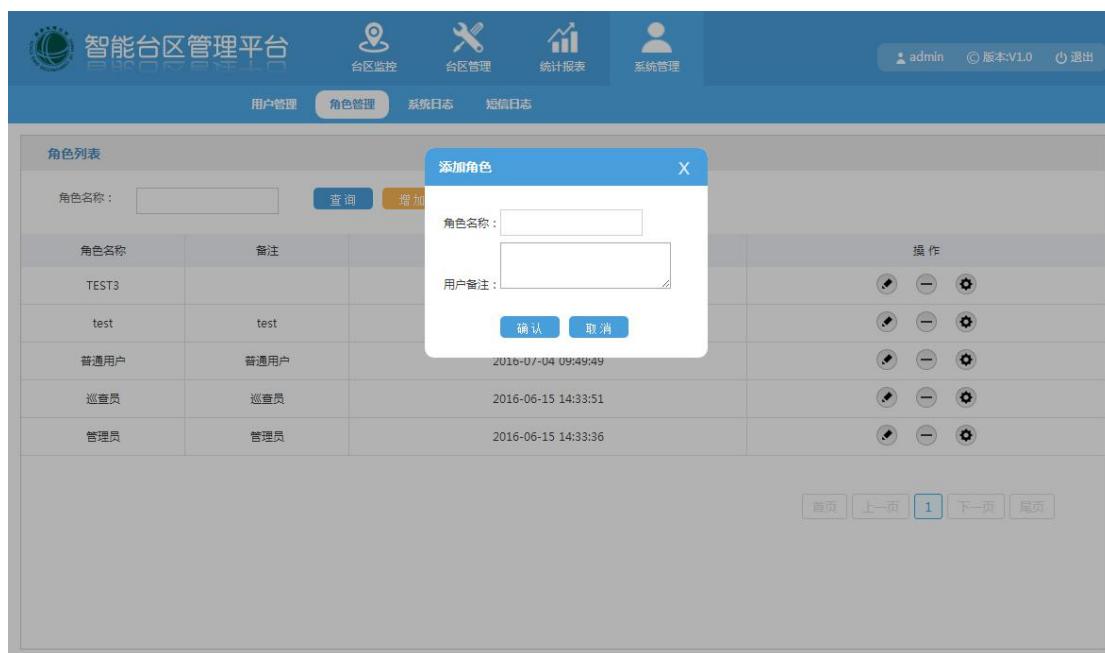
2.4.2 Role Management

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



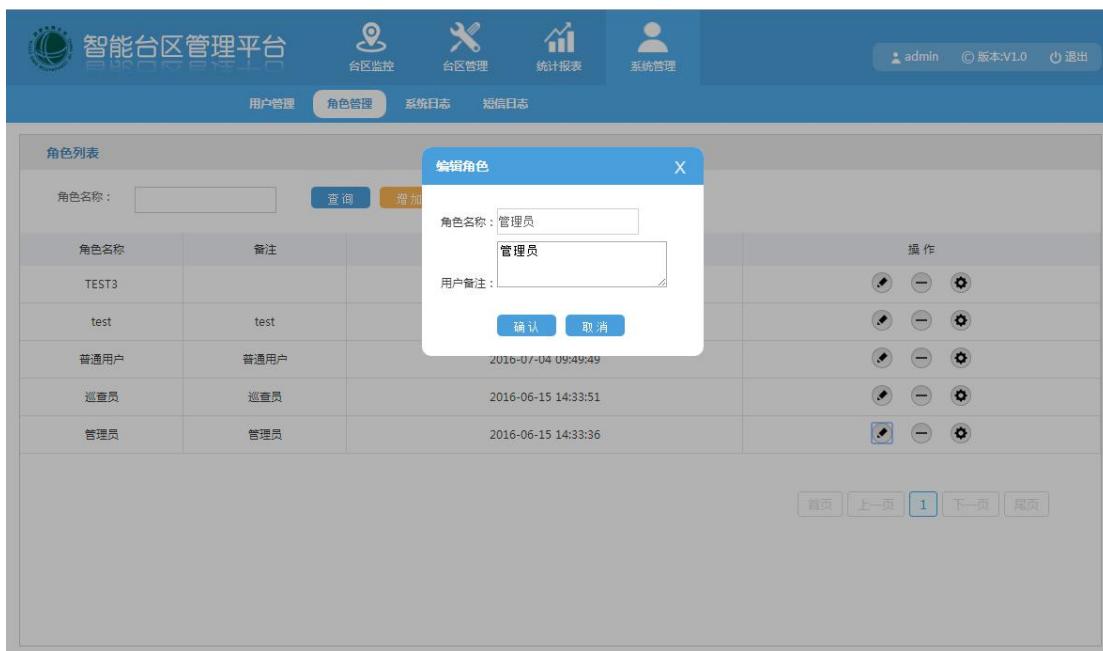
角色名称	备注	创建时间	操作
TEST3		2016-07-07 17:16:55	
test	test	2016-07-06 10:16:32	
普通用户	普通用户	2016-07-04 09:49:49	
巡查员	巡查员	2016-06-15 14:33:51	
管理员	管理员	2016-06-15 14:33:36	

◆ **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:

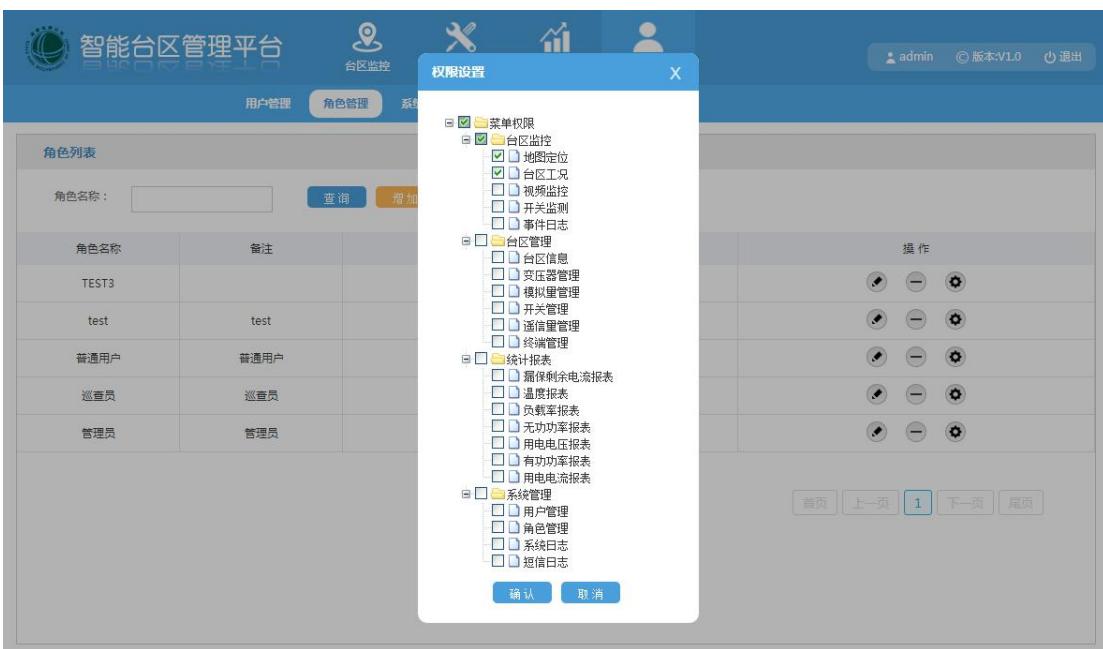


角色名称	备注	操作
TEST3		
test	test	
普通用户	普通用户	
巡查员	巡查员	
管理员	管理员	

◆ **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:

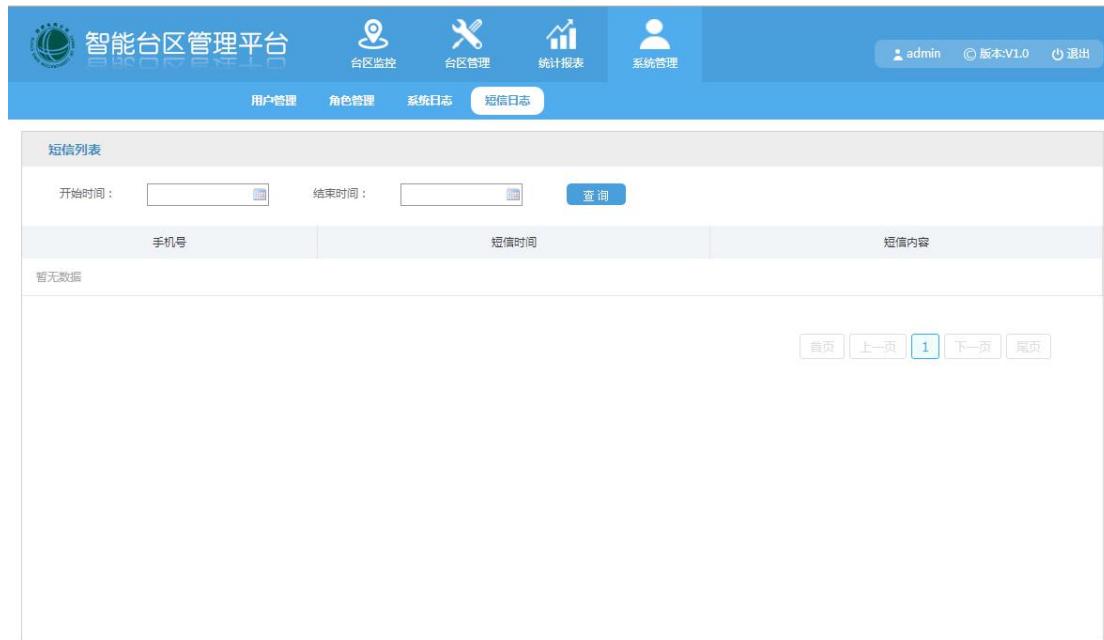


◆ **To set the role:** click the role information “Set” button, the tree diagram menu will pop up, tick the menu that needs to be allocated and save, the specific interface is as follows:



2.4.3 SMS Log

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

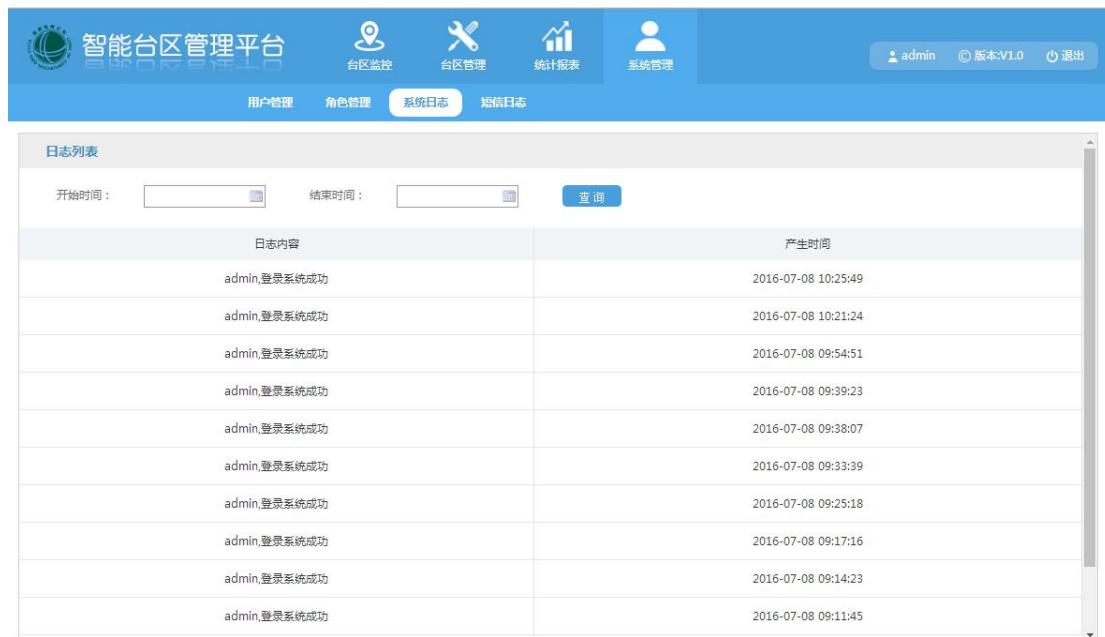


The screenshot shows the '短信日志' (SMS Log) section of the system. At the top, there are input fields for '开始时间' (Start Time) and '结束时间' (End Time), a '查询' (Search) button, and a table header with columns '手机号' (Mobile Number), '短信时间' (SMS Time), and '短信内容' (SMS Content). Below the table, it says '暂无数据' (No data available). At the bottom right, there are page navigation buttons: '首页' (Home), '上一页' (Previous Page), '1' (Current Page), '下一页' (Next Page), and '尾页' (Last Page).

◆ **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:

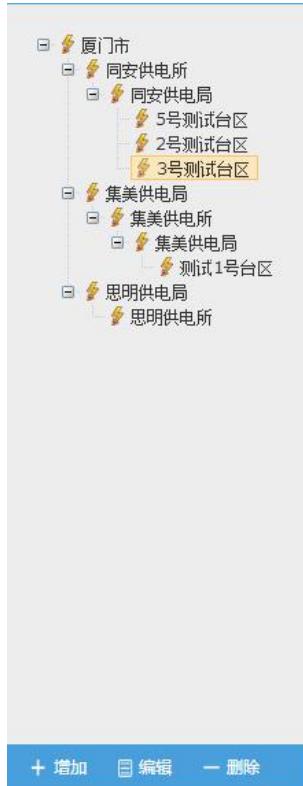


The screenshot shows the '日志列表' (Log List) section of the system. At the top, there are input fields for '开始时间' (Start Time) and '结束时间' (End Time), a '查询' (Search) button, and a table header with columns '日志内容' (Log Content) and '产生时间' (Generated Time). Below the table, it lists several log entries all starting with 'admin,登录系统成功' (admin, successful login) and their corresponding dates and times.

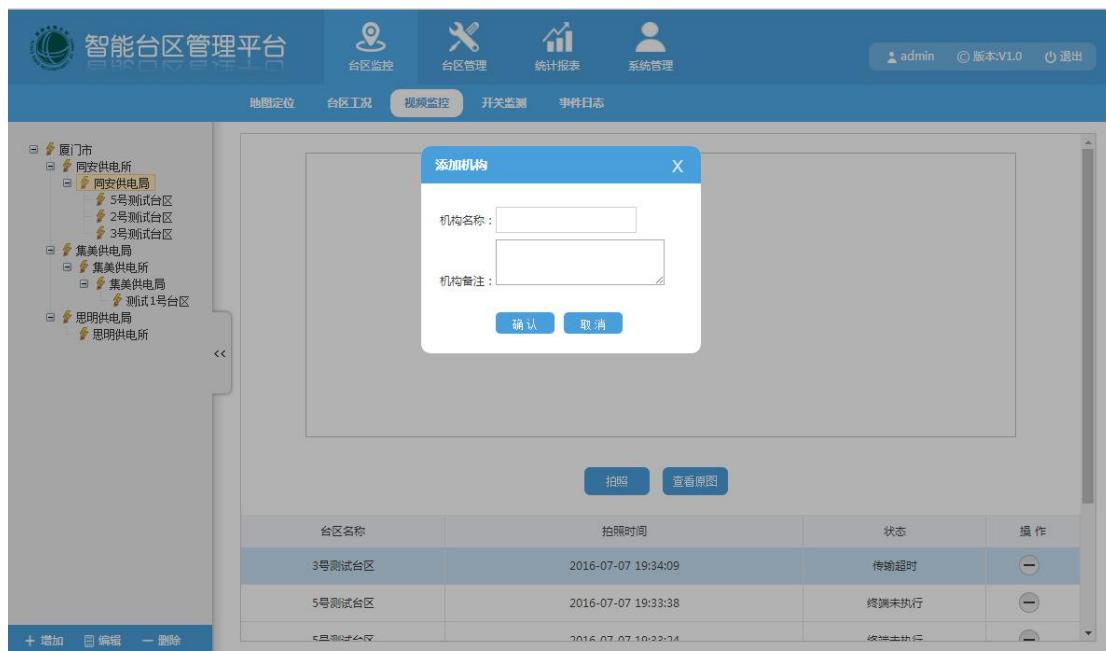
日志内容	产生时间
admin,登录系统成功	2016-07-08 10:25:49
admin,登录系统成功	2016-07-08 10:21:24
admin,登录系统成功	2016-07-08 09:54:51
admin,登录系统成功	2016-07-08 09:39:23
admin,登录系统成功	2016-07-08 09:38:07
admin,登录系统成功	2016-07-08 09:33:39
admin,登录系统成功	2016-07-08 09:25:18
admin,登录系统成功	2016-07-08 09:17:16
admin,登录系统成功	2016-07-08 09:14:23
admin,登录系统成功	2016-07-08 09:11:45

2.4.5 Institution Management

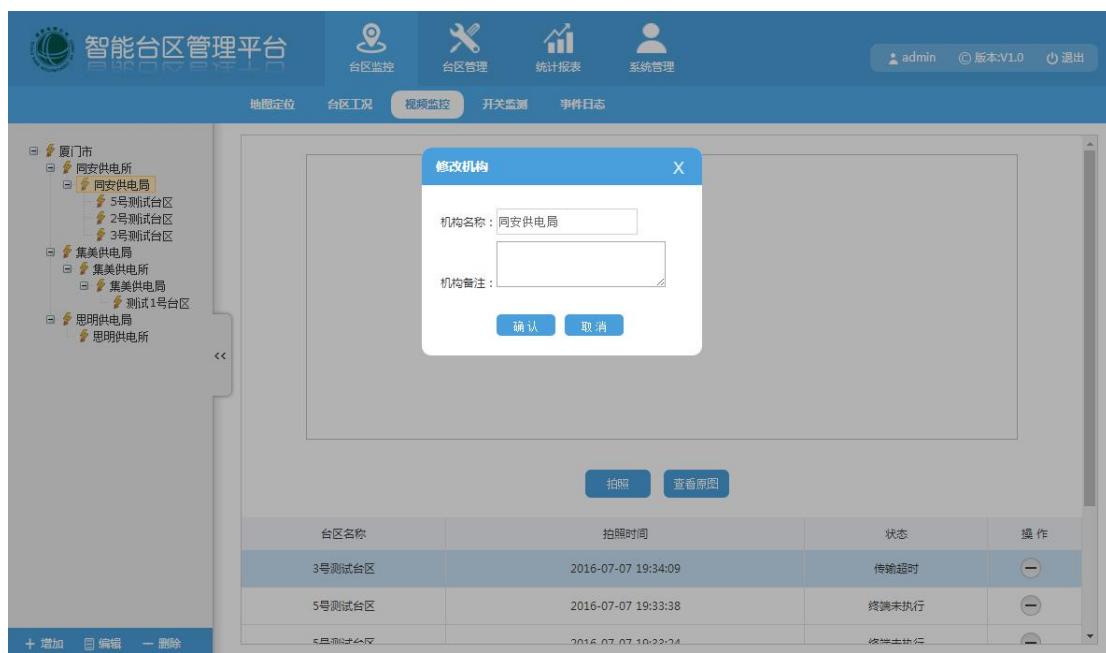
Institution tree diagram: following is the institution tree diagram.



◆ **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

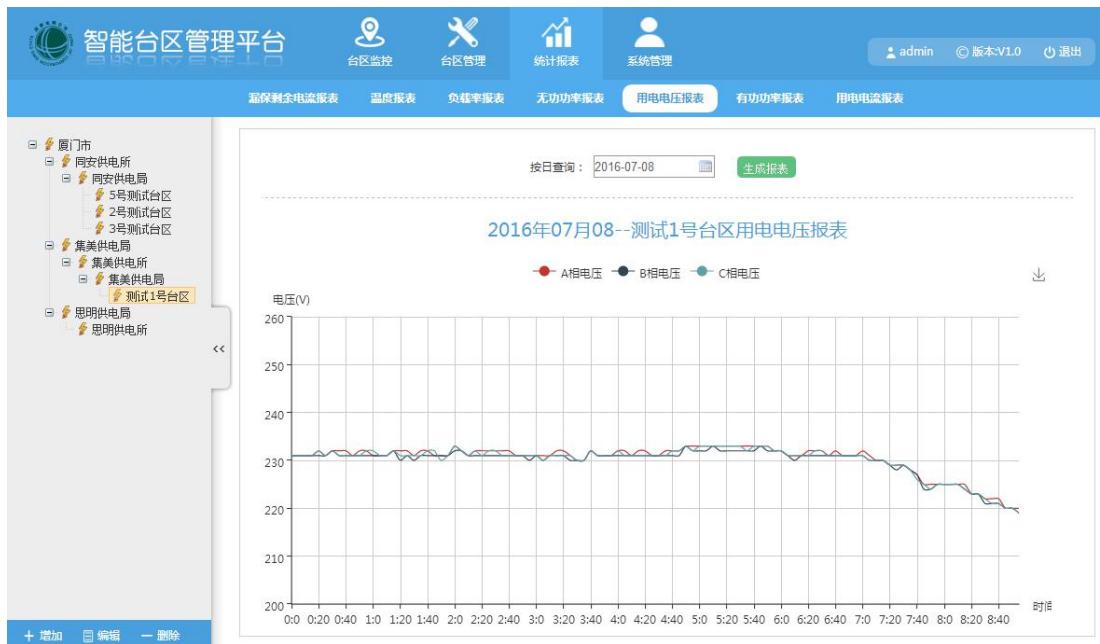
2.5.1 Leakage Residual Current Report

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



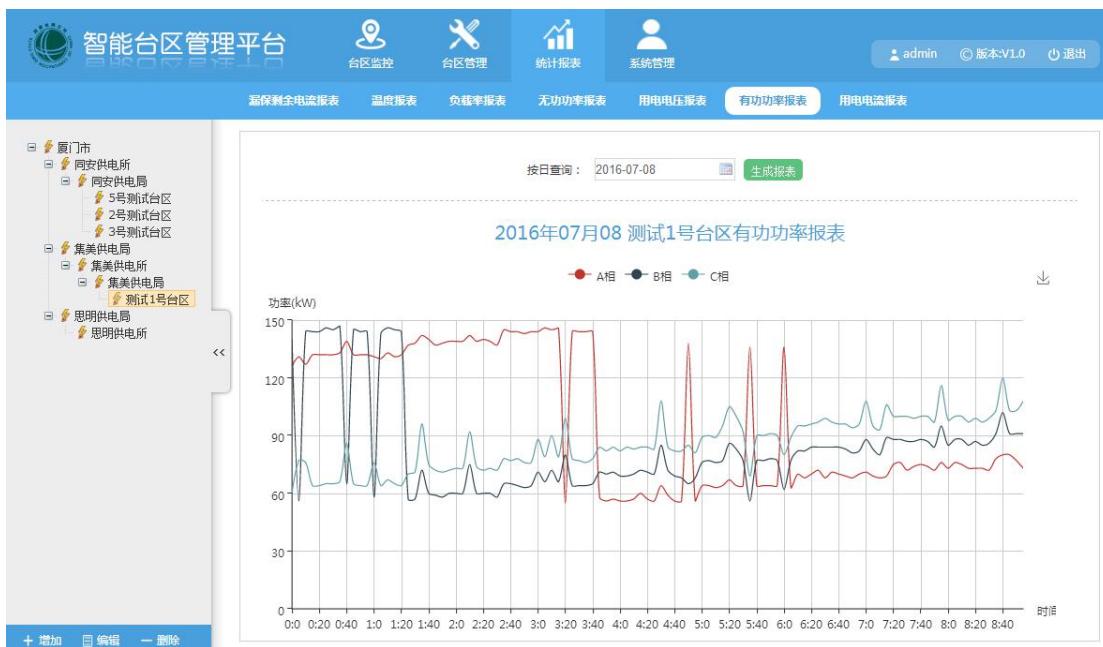
2.5.2 Electricity Voltage Report

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:



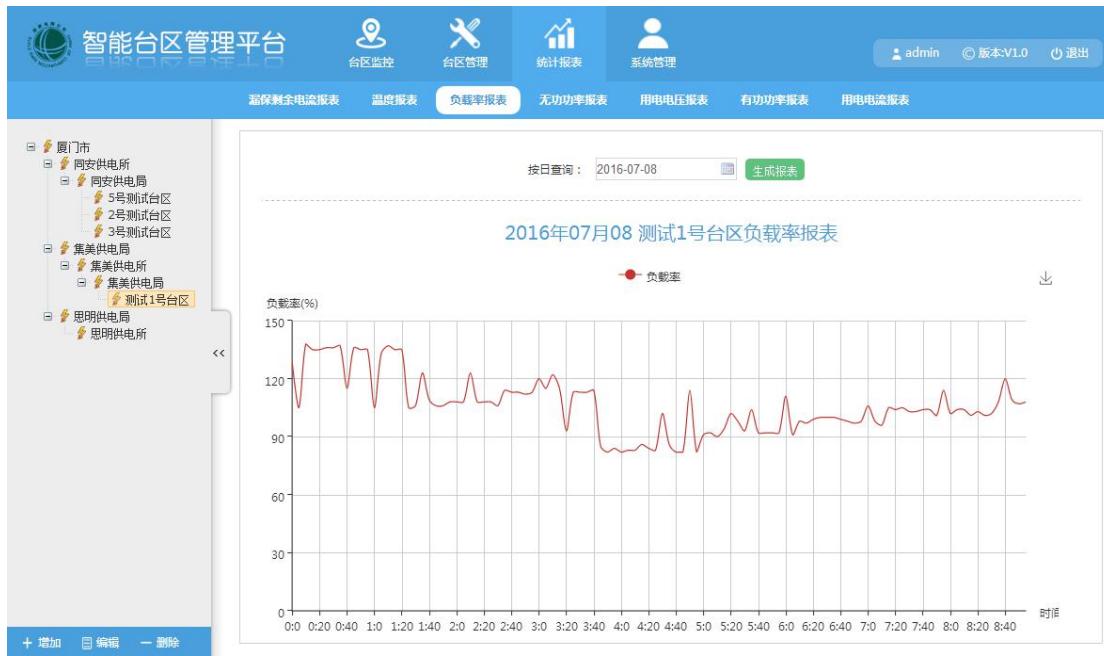
2.5.5 Temperature Report

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.