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# About This Manual

## About This Manual

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### Target Group

This manual is intended for operators of the iSolarCloud O&M platform.

### Symbols

"Note" indicates additional information, emphasized contents or tips that may be helpful, e.g. to help you solve problems or save time.

### System Requirements

Item	Requirement
Browser	Chrome 60 or later (recommended), Safari 10 or later, Firefox 60 or later, and IE11 or later
Resolution	1920 * 1080 (recommended)/1366 * 768 (supported)

### Expression Explanation

Type	Example
Select certain element or menu	Click "Plant Management"
Select several elements or menus	Click "Plant Management" -> Channel Management"

### Intended Use

This manual is intended to guide users in operating and managing iSolarCloud.

This manual is prepared based on the version V1.4.6.20210128.  
Screenshots are for reference only, and actual interfaces may differ.



Asset

**Asset**

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# Device Information

## Device Information

Click “Asset -> Device Information”, to enter the corresponding interface.




The screenshot shows a web interface for device management. On the left is a sidebar with a search icon and a list of device types: Inverter, Combiner Box, Meter, Circuit Protection, Transformer, and ENU. The main area has a search bar with fields for 'Device Name' and 'Device Address', and 'Search' and 'Reset' buttons. Below the search bar is a table with the following data:

Device Name	Device Address	Device Model	Manufacturer	Commissioning Date	Current Status	Operation
线路保护#8002	8002	EDCS-7250	Chongqing New Century	2016-11-10 00:00:00	Available	 
电表#8004	8004	Other	Other	2015-04-02 08:19:00	Available	 
1#MV逆变器1	1	SG500KTL	SUNGROW	2015-09-18 15:06:00	Available	 


### Device Search Bar

Enter the device name and device address, and click “Search”, to view corresponding devices.

### View Device Information

Click the icon  in the operation bar to view device detail information.

### Modify Device Information

1. Click the icon  in the operation bar to view device detail information.
2. Modify the device information.
3. Click “Save”.



# Material Management

## Material Management

Click “Asset -> Mat. Mgt” to enter the corresponding interface.

Materials Name 
Material Category 
Mat. subcategory

	Materials Name	Material Coding	Material Category	Mat. subcategory	Materials Warehouse	Material Unit	Manufacturer	Materials Price ( CNY )	Specification/Type	Material Status	Operation
<input type="checkbox"/>	222	01-01-146	Transformer	Distribution Transformer	仓库	G	2222	22	222	Not Used	
<input type="checkbox"/>	11	05-01-145	Isolation Switch	High Voltage Isolation Switch	仓库	G	11111111111	11	111	Used	
<input type="checkbox"/>	测试前期	01-01-141	Transformer	Power Transformer	仓库	G	测试之家	123	123456	Not Used	

### Search Bar

Enter material name, select material category subcategory, and click “Search”, to view corresponding material list.

### Add Material Information

1.Click “Add”, and the new material window pops up.

2.Fill in material information.


Parameter	Description
Materials Warehouse *	Name of the warehouse storing the material
Material Name *	Name of the material
Material Category *	Category of the material
Mat. subcategory	Subcategory of the material
Specification/Type *	Specification of the material
Material Unit *	Unit of the material
Manufacturer	Manufacturer of the material
Material Price *	Unit price of the material
Remarks	-

\*indicates fields that must be filled in.


3.Click “Save”.




### **View Material Information**

Click the icon  in the operation bar to view material detail information.

### **Modify Material Information**

1. Click the icon  in the operation bar to enter the material information window.
2. Modify the material information.
3. Click "Save".

### **Delete Material Information**

1. Click the icon  in the operation bar, and the prompt window pops up.
  1. Click "Confirm". The information is deleted successfully.
3. Click "Confirm" on the pop-up window.

### **Delete Material Information in Batch**

1. Select material information that needs to be deleted, and click "Batch Deleted".
2. Click "Confirm" on the pop-up window. The information is deleted successfully.
3. Click "Confirm".



# Database

## Database

Click “Database” to enter the corresponding interface.

Knowledge Base Type		<div>Please Select</div>	Language	<div>English</div>	Knowledge Base Name and Keyword		<div>Knowledge Base Name and Keyword</div>	<div>Search</div>			<div>Add</div>	<div>Batch Deleted</div>
<div><input type="checkbox"/></div>	Knowledge Base Name	Knowledge Base Type	Device Type	Key Words	Cited Times	Add Time	Add Person	Status	Operation			
<div><input type="checkbox"/></div>	System alarm	Fault Maintenance Records	Inverter	System alarm	0	2019-07-01 10:16:47	admin	Audit Passed	<div><div><div></div><div></div><div></div></div></div>			
<div><input type="checkbox"/></div>	System fault	Fault Maintenance Records	Inverter	System fault	0	2019-07-01 10:16:47	admin	Audit Passed	<div><div><div></div><div></div><div></div></div></div>			
<div><input type="checkbox"/></div>	Battery fault	Fault Maintenance Records	Inverter	Battery fault	0	2019-07-01 10:16:47	admin	Audit Passed	<div><div><div></div><div></div><div></div></div></div>			

### Search Bar

Select database type and language, enter database name and keyword, and click “Search” to view corresponding database list.



### Add Database

- 1.Click “Add” to enter the corresponding interface.
- 2.Fill in database information. The information includes language, knowledge base type, knowledge base name, device type, repair type, maintenance cycle, content, and precautions.
- 3.Click “Save”.


### Delete Databases in Batch

- 1.Select several databases and click “Batch Deleted”, and the prompt window pops up.
- 2.Click “Confirm”. The information is deleted successfully.
- 3.Click “Confirm”.

### View Database Information

- 1.Click the icon  in the operation bar to enter the detail interface.
- 2.Click the icon  in the upper right corner to close the interface.

### Delete Database

- 1.Click the icon  in the operation bar, and the prompt window pops up.
- 2.Click “Confirm”. The information is deleted successfully.
- 3.Click “Confirm”.







## Appendix

## Appendix

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# Manual Description

## Manual Description

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# Contact Information

## Contact Information

Should you have any question about this product, please contact us.

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# Common Operations

## Common Operations

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### Login



This section describes how to log into the iSolarCloud management system.

#### Prerequisites

You have got the account and password.

The iSolarCloud operates normally and the network between the computer and the server is normal.

#### Procedure

1. Enter the specified URL <https://www.isolarcloud.com> in the browser address bar.
2. Click the icon  in the upper right corner to switch languages.
3. The system automatically switches to the corresponding server address according to the user IP; or users can click the button  to manually switch the server address. Mainland China users select “Chinese server”, European and African users select “European server”, the other users select “International server”.
4. Enter the username and password and click “Login”.

For the convenience of subsequent login, you can tick “Remember me”.


### Logout

This section describes how to log out of the iSolarCloud management system.

#### Prerequisites

You have logged into the iSolarCloud management system.

#### Procedure

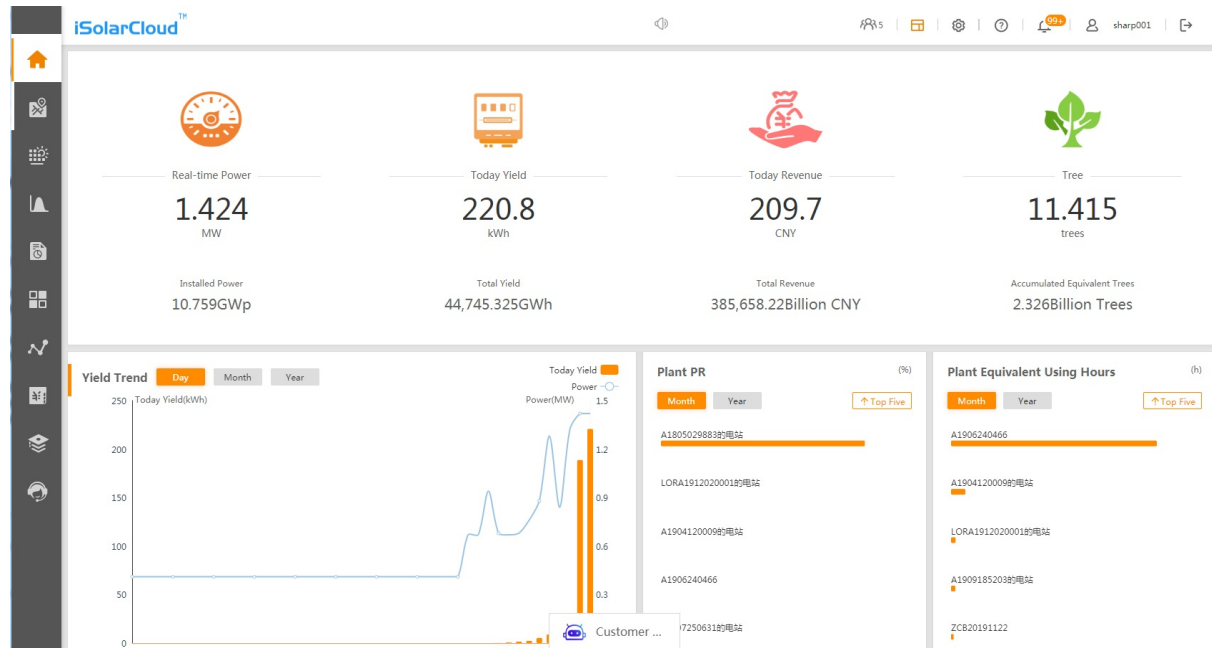
Click the button  in the upper right corner of the home page to log out of the iSolarCloud management system.



# Homepage

## Homepage

This chapter describes the home page of the iSolarCloud management system and corresponding functions.



### Menu Bar








The menu bar displays main function categories of the iSolarCloud management system. Users can switch to the corresponding function interfaces and perform related operations.

Menu	Description
Home	View information such as yield trend, power, yields, revenue, equivalent tree planting, plant PR, and plant equivalent using hours.
Plant List	View power installed, real-time power, daily yield, alarm, and communication information.
Map	Locate the plant and view general plant information.
Plant	View detailed information of a single plant, such as plant list, single plant home, diagram, plant unit, inverter, combiner box, and alarm.
Chart	View power generation curve of the plant.
	View plant reports (daily report, weekly report, monthly report, annual report)



	and total report); or create self-defined reports.
Management	View job order status, upgrade devices, etc.
Intelligent Analysis	View analysis information on devices and plants, such as yield analysis and power predication.
Asset	View detailed information on devices and materials.
Database	View fault information of plant devices.

## Setting

Designation	Description
Online Users	Click the icon  to view detailed information on online users.
Home Configuration	Click the icon  to select items to be displayed on the homepage.
Background Management	Click the icon  to enter the background management system.
Help	Click “  -> Guide Page” and perform operation according to instructions. Click “  -> User Manual” to view, download, or print the user manual.
Notice	Click the icon  to view reminder information on job order, parameter setting, etc.
Personal Setting	Click “Personal Setting” to set basic personal information, and switch languages, themes, radiation units, and temperatures units. Click “Account and security” to bind an e-mail address for retrieving password. In addition, you can change the password and cancel the account.
Logout	Click the icon  to log out of the iSolarCloud management system.

## Information Display Area

Information such as yield trend, revenue, and plant PR is displayed in this area.



Map

**Map**

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# Panorama

## Panorama

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The demonstration levels vary with power plant types. Unit level is for ground plants and commercial plants, and the device level is for residential plants by default. Description is given by using ground plant as an example.

### Procedure

1. Click "Map -> Panorama" to enter the corresponding interface.
2. Select a plant from the left plant list.
3. Click the unit icon  to view power and daily power generation of the unit.
4. Click the icon  to view devices belonging to the unit.
5. Click the device icon  to view power and daily power generation of the device.
6. Click the icon  to view basic device information and query alarm and maintenance records of the device.
7. Perform the following operations according to actual conditions.
  - Enter device name and click "Search", to view corresponding devices.
  - Click "Upload" to upload a panorama. You can upload the panorama in the following two manners:
    - Click "Click to Choose Pictures" to select an image, and click "Open" view the image to be uploaded. Click "Start to Upload" to finish the uploading operation.
    - Drag the image to the window and click "Start to Upload" to finish the uploading operation.
  - Click "Edit" to move device icons. Click the icon  to save the modification.
  - Click the icon  to zoom in the current interface. Click the icon  to zoom out the current interface.
  - Click the icon  to adapt to the page view.
  - Click the icon  to enter full screen. Click the icon  to recover the window.












# Plant Map

## Plant Map

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### Procedure

1. Click “Map -> Plant map” to enter the corresponding interface.
2. Select a plant from the left plant list. The system will automatically locate the plant and display plant information such as real-time power and daily yield. Click the number following fields like “Unconfirmed”, “Pending”, and “Processing” to automatically jump to the corresponding interface.
3. Perform the following operations according to actual conditions.
  - Click the icon  to enter full screen. Click the icon  to recover the window.
  - Click the icon  in the lower left corner, to view information such as real-time power, E-today, and total power installed capacity.
  - Click the icon  in the lower right corner, to zoom in the map. Click the icon  in the lower right corner to zoom out the map.



Plant

**Plant**

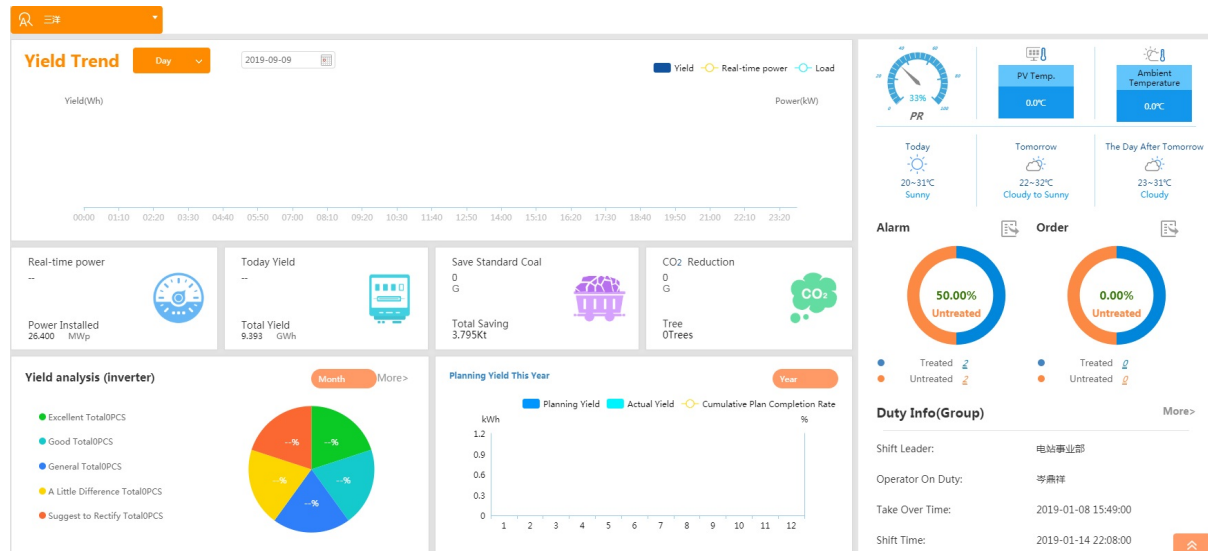
---



# Single Plant Home

## Single Plant Home

Click “Plant -> Single Plant Home” to enter the corresponding interface, on which information such as yield trend, yield analysis, planning yield, alarm and order is displayed.



### Yield Trend

Daily yield trend is displayed on the interface by default. Click the icon to switch to monthly yield trend and annual yield trend. Click the icon to select the desired date.

### Yield Analysis (Inverter)

Monthly yield analysis is displayed on the interface by default. Click the icon to switch to annual yield analysis.

Click “More” to jump to the “Intelligent Analysis” interface.

### Planning Yield This Year

Yield planning of the current year is displayed on the interface by default. Click the icon to switch to the yield planning of the current year.

### Alarm and Order

Click the icon on the right of “Alarm” or “Order” to export alarms or orders that are not processed.

Click the number of treated alarm or untreated alarm to jump to the “Alarm” interface.



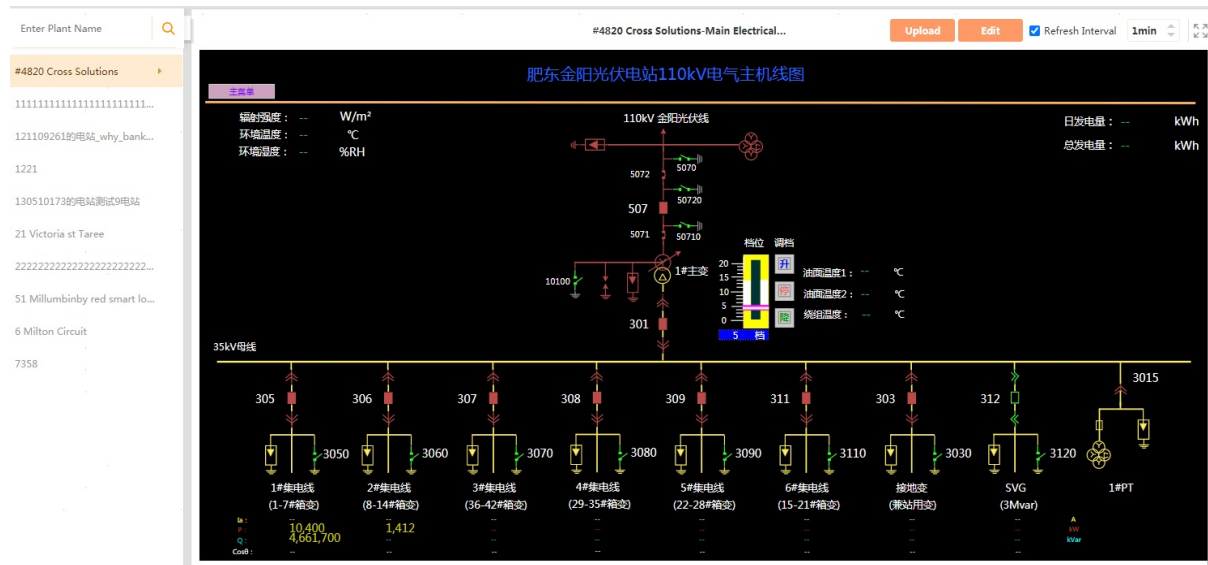
Click the number of treated order or untreated order to jump to the “Work Order Process” interface.




# Primary Wiring Diagram


## Primary Wiring Diagram

Click “Plant -> Diagram” to enter the corresponding interface, on which you can view and modify the primary wiring diagram of the plant.



### Plant Search Bar

Quick search: enter the plant name and click the icon , to view the corresponding plant list.

Detailed search: click the icon , enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Refresh Time

The refresh time is 1min by default (the minimum refresh interval). Tick “Refresh Time”, and click the

icon  to increase the value or click the icon  to decrease the value.

### Uploading Wiring Diagram

Click “Upload”, and a window pops up. Click “Select File” to select a file, click “Open”, and then “Submit”, to finish the uploading operation.

### Edit Wiring Diagram

Click “Edit”, to edit the wiring diagram.



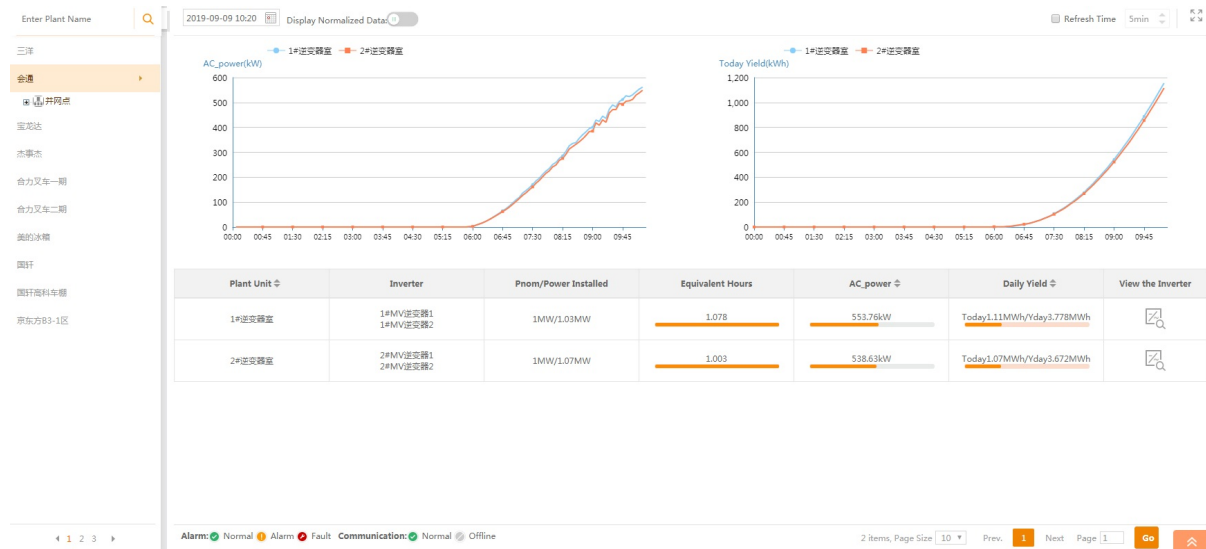





# Plant Unit


## Plant Unit

Click “Plant -> Plant Unit”, to enter the corresponding interface, on which information such as AC power curve, today yield curve, and daily yield is displayed.





### Plant Search Bar


Quick search: enter the plant name and click the icon , to view the corresponding plant list.


Detailed search: click the icon , enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Refresh Time


The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon  to increase the value or click the icon  to decrease the value

### Display Normalized Data

Click the icon  to select the desired date and click “OK”. The interface displays, by default, curves of AC power at the grid-connected point and today yield.

Click the icon  following the field “Display Normalized Data:” to view the power normalized curve and equivalent hours curve.

### View the Inverter

Click the icon  to jump to the corresponding “Inverter” interface.



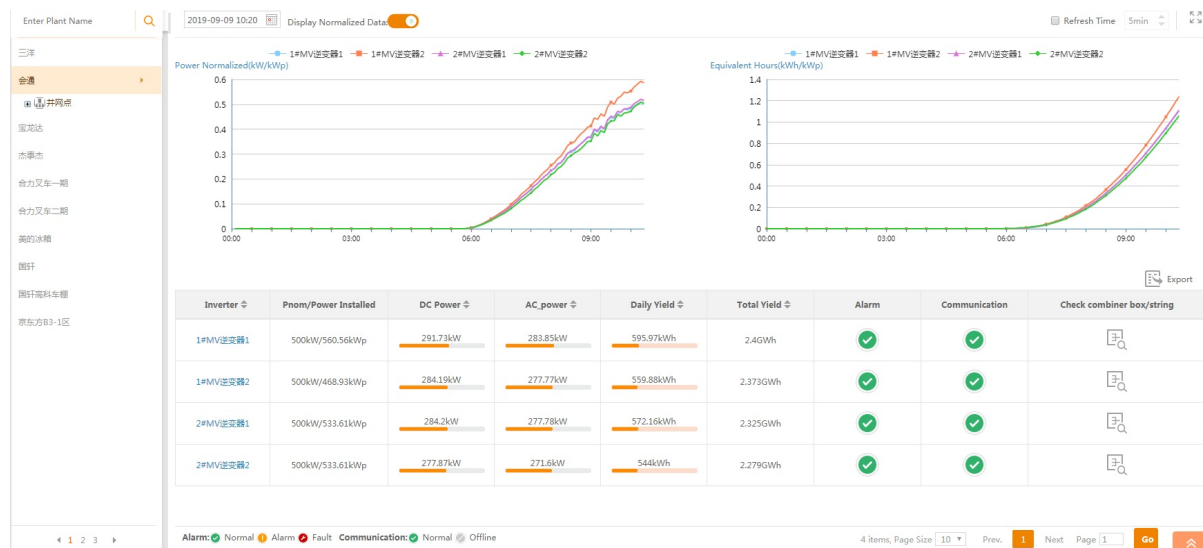




# Inverter

## Inverter

Click “Plant -> Inverter” to enter the corresponding interface, on which information such as inverter AC power curve, today yield curve, and daily yield is displayed.



### Plant Search Bar

Quick search: enter the plant name and click the icon 🔍, to view the corresponding plant list.

Detailed search: click the icon 🏠, enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Refresh Time

The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon ⬆️ to increase the value or click the icon ⬇️ to decrease the value.

### Display Normalized Data

Click the icon 📅 to select the desired date and click “OK”. The interface displays, by default, curves of AC power at the grid-connected point and today yield.

Click the icon 📊 following the field “Display Normalized Data:” to view the power normalized curve and equivalent hours curve.

### Check Combiner Box/String

Click the icon 🔍 to jump to the corresponding “Combiner Box” interface.



### **Export Inverter Running Information**

Click “Export” to store the inverter running information in the local.

### **View Inverter Information**

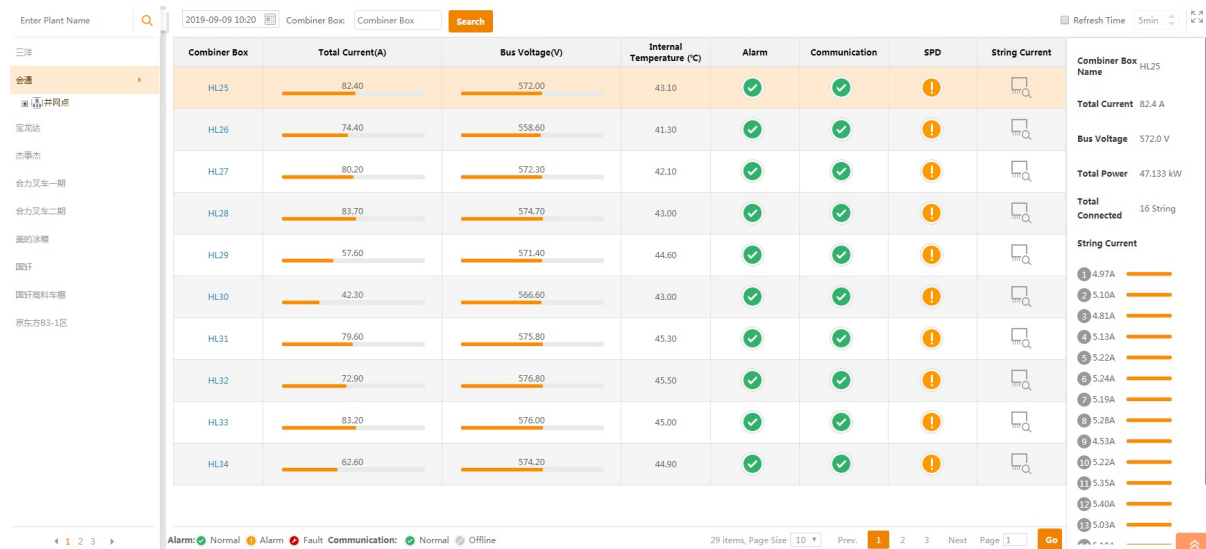
Click the inverter name to view basic device information and alarm and maintenance records. Click “Curve” to view the inverter curve.



# Combiner Box

## Combiner Box

Click “Plant -> Combiner box” to enter the corresponding interface, on which information such as total current, bus voltage, and alarm information of the combiner box is displayed.



### Plant Search Bar

Quick search: enter the plant name and click the icon 🔍, to view the corresponding plant list.

Detailed search: click the icon 📏, enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Combiner Box Search Bar

Click the icon 📅 to select the desired date and click “OK”.

Enter combiner box name and click “Search”, to view corresponding combiner box list.

### Refresh Time

The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon ⬆️ to increase the value or click the icon ⬇️ to decrease the value.

### View Combiner Box Information

Click the combiner box name to view basic device information and alarm and maintenance records. Click “Curve” to view the combiner box curve.







# Alarm Management

## Alarm Management


Click “Plant -> Alarm”, to enter the corresponding interface, on which plant alarm information is displayed.

The screenshot shows the Alarm Management interface. At the top, there are tabs for "Active", "Fault History", and "Quarantine Area". Below the tabs, there is a search bar with "Time" and "Alarm Name" fields, and a "Search" button. To the right of the search bar, there is a "Refresh Interval" dropdown set to "5min". Below the search bar, there is a section for "Alarm Type" with checkboxes for "Fault: 394", "Alarm: 189", "Prompt: 111", and "Advice: 0". To the right of this section, there are buttons for "Reverse Missing Invoice", "Batch Close", "Report Fault", and "Export". Below the search bar, there is a section for "Alarm Processing Status" with checkboxes for "Unconfirmed", "Pending", "Processing", and "Resolved". Below this section, there is a table of alarm records. The table has columns for "Plant Name", "Alarm Type", "Fault Code", "Alarm Name", "Device Interval", "Device Name", "Status", "Occurrence Time", and "Operation". The table contains 8 rows of data. To the right of the table, there is a sidebar with filters for "Alarm Name", "Device Model", "Fault Type Code", "Occurrence Time", "Source", and "Reporter". The sidebar also has a "Reporter" section with radio buttons for "Unconfirmed", "Pending", "Processing", "Resolved", and "Closed".

Plant Name	Alarm Type	Fault Code	Alarm Name	Device Interval	Device Name	Status	Occurrence Time	Operation
A18020800701-低电压	Fault	2	Grid Overfrequency	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Islanding	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Excessive Leakage Current	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Grid Abnormal	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Grid Voltage Unbalance	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	PV Reverse Connection Fault	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Excessively High Ambient Temperature	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	
A18020800701-低电压	Fault	2	Low Ambient Temperature	A18020800701-低电压	SG225HX_001_001	Unconfirmed	2021-02-04 02:54:32	

### Plant Search Bar



Quick search: enter the plant name and click the icon , to view the corresponding plant list.

Detailed search: click the icon , enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Alarm Search Bar


Select the tab “Active”, “Fault History” or “Reject Area”. Set the time segment, enter alarm name, and select the types. Click “Search” to view the corresponding alarm list.

### Refresh Time

The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon  to increase the value or click the icon  to decrease the value.


### Operation Bar

- View fault details


Click the icon  to enter the corresponding interface. The fault information displayed includes fault type, source, processing time, and processing opinion.



- Transfer defect elimination ticket

Click the icon  to enter the corresponding interface. Select repair time and remind person, fill in comments, and click “Confirm”.

- Close Fault

Click the icon  to enter the corresponding interface. Fill in processing opinion and click “Close Fault”.

### Reject Alarm

Tick one or more faults on the “Active” interface, click “Transfer Defect Elimination Ticket > Reject”, fill in comments, and click “Confirm”. The corresponding alarm information will be removed to the “Reject Area”.

Only faults on which transferring defect elimination ticket is not performed can be rejected.

### Undo Reject

Tick one or more faults on the “Reject Area” interface, click “Undo reject”, fill in comments, and click “Confirm”. The corresponding alarm information will be removed to the “Active” tab.

### Close Fault in Batch

Select multiple faults in the fault list, and click “Batch Close” to close these faults in batch.

### Report Fault

Click “Report Fault” to enter the corresponding interface. Select plant name, device type, fault name, fault device, source, and processing time, fill in fault details, and click “Report Confirmation”.

### Export Alarm List

Click “Export” to export the alarm list within specific time segment, where the exported file is in .xlsx format by default.








Alarm	Display the number of faults and alarms related to the cleaning robot in the plant.
Scheduled Tasks	Display the latest three tasks of the cleaning robot.
Availability	Display information including number of operating cleaning robots, un-operating cleaning robots, and availability in the last 30 days by default. Click time to change the time range.
Cleaning Times	Display information including number of operating cleaning robots and cleaning hours in the last 30 days by default. Click time to change the time range.
Plant	Display information such as plant picture, cleaning capacity, and installed power.

### Operation Bar

Click the icon  , to access the “Cleaning View” interface. Specifically, refer to the chapter “Cleaning View”.




# Cleaning View


## Cleaning View

Click “Plant -> Cleaning View”, to access the corresponding interface, on which you can view cleaning robot status and start/stop the cleaning robot.




### Plant Search Bar

Quick search: enter the plant name and click the icon  , to view the corresponding plant list.

Detailed search: click the icon  , enter the plant name and device S/N, select power installed, type, address, and organization, and click “Confirm”, to view the corresponding plant list.

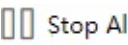
### Start All Cleaning Robots

1. Click the icon  , enter the login password, and click “Confirm”, so that the “Start All” window pops up.
2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

If the delivered instruction has not been executed within the set time, it will turn to be in

3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.

### Stop All Cleaning Robots

1. Click the icon  , enter the login password, and click “Confirm”, so that the “Stop All” window pops up.
2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.




3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.

### View Cleaning Robot Information

1. Select a PV array, and access the tab “Device Information” by default. Information on the robot, PV panel, and battery can be viewed

2. Click the tab “Initial Information” to view the initial information of the cleaning robot.


### Start the Cleaning Robot

1. Select a PV array, click the icon  , enter the login password, and click “Confirm”, so that the “Start” window pops up.

2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.


### Stop the Cleaning Robot

1. Select a PV array, click the icon  , enter the login password, and click “Confirm”, so that the “Stop” window pops up.

2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.


### Reverse Cleaning Direction

1. Select a PV array, click the icon  , enter the login password, and click “Confirm”, so that the “Reverse” window pops up.

2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.

### Rest the Cleaning Robot

1. Select a PV array, click the icon  , enter the login password, and click “Confirm”, so that the




“Reset” window pops up.

2. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

3. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.


### View Running Record

Select a PV array, and click the icon , to access the “Running Record” interface, on which device running records are displayed.

### View History Tasks

1. Click “Task List” in the upper right corner, to access the “View Task History” interface.
2. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.
3. (Optionally) select a time range, enter the task name, and click “Search”, to view the corresponding history tasks.

### Cleaning Strategy

1. Click “Cleaning Strategy” in the upper right corner, to access the cleaning strategy interface.
2. Click the icon  in the operation bar of Policy 1, to access the “Policy 1” interface.
3. Perform the following operations if necessary.

- Temporary strategy

Execute the cleaning strategy only once in the specified time.

Select “Temporary Strategy”, to set start date and start time, and click “Confirm”.

- Fixed strategy

Execute the cleaning strategy periodically in the specified time.

Select “Fixed Strategy”, to set start date, start time, and cleaning interval (Days), and click “Confirm”.

4. (Optionally,) repeat step 2 and step 3, to add the cleaning strategy 2 to cleaning strategy 4.

5. Click “Apply Settings”, enter the login password, and click “Confirm”, to access the “Cleaning Strategy” interface.

6. Enter task name, select instruction valid period, and click “Confirm and Issue”, so that the system will generate the parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.



If the delivered instruction has not been executed within the set time, it will turn to be invalid.

7. After the instruction is delivered successfully, enter the “View Task History” interface automatically. Click “View” on the operation bar, to view the set value, read-back value, and execution result of the current task.



Alarm Status		Plant Name	Device S/N	Installed Power:	kWp	kWp	Screening Column	Refresh Interval	5min		
No.	Alarm	Communication	Plant Name	Installed Power	Real-time Power	Daily Yield	Total Yield	Equivalent Hours	Transient-radiation	PR	View Unit
1	<span>Fault</span>	<span></span>	D123452345-广博升级	--	0W(Inverter)	Today 0kWh/Yday 0kWh(Inverter)	71.736MWh	Today 0.00h	--	--	
2	<span>Alarm</span>	<span></span>	#4820 Cross Solutions	--	0W(Inverter)	Today 57.9kWh/Yday 32kWh(Inverter)	11.95MWh	Today 2.32h	--	--	







Chart

**Chart**

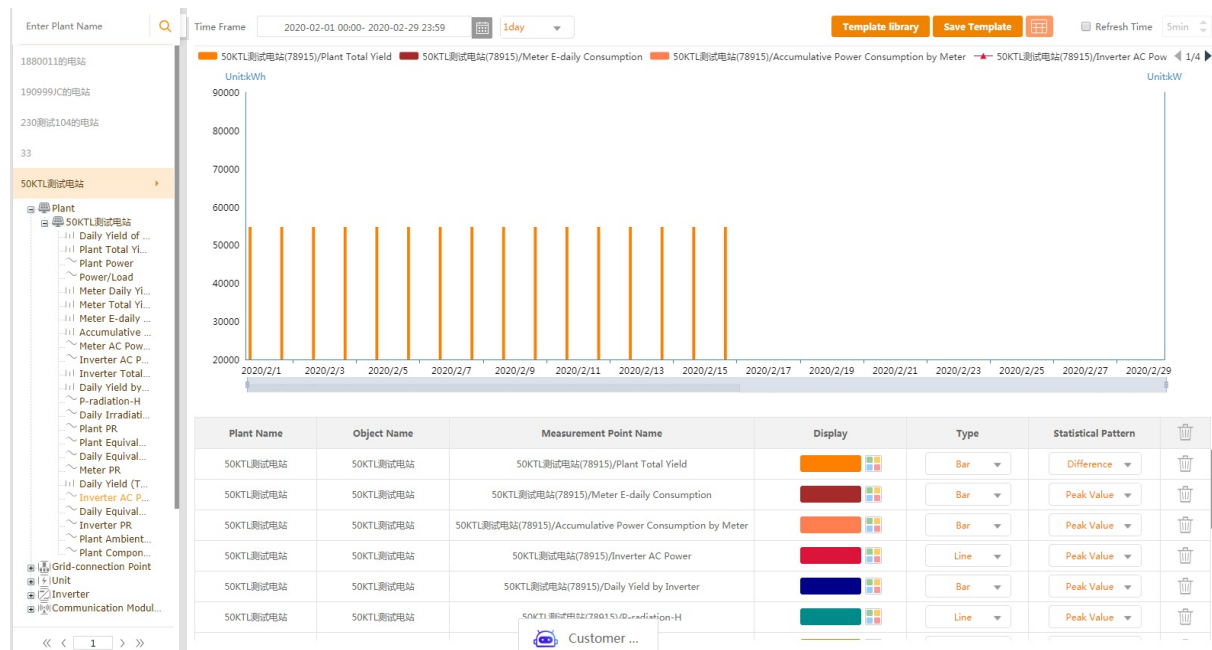
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# Interface Description

## Interface Description

Click “Chart” to enter the corresponding interface, on which plant curve and device curve are displayed.



### Plant List

View information on the plants, devices, and measuring points of the current user.

### Time Frame

Set the time range and time interval.

### Refresh Time

The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon to increase the value or click the icon to decrease the value.

### Query Template

Save template: Save the current search conditions as a template for future application.

Template library: use the existing query templates.

### Information Display Area

Display the plant or device information, such as curve and report.









# View the Chart

## View the Chart

---

### Procedure


1. Click “Chart” to enter the corresponding interface.
2. Select parameters of a corresponding device in the plant list to add a parameter curve. The upper part displays curve within a day by default. The lower part displays parameter list. You can change the curve type and statistical pattern.
3. Optionally, click the icon  in the upper right corner of the interface to display the parameters in the table form. Click the icon , and a “Save as” window pops up. Select a report storage location and click “Save” to save the report locally.

### Further Operations

- Deleting a single curve

Click the icon  in the parameter list area, to delete the corresponding curve.

- Deleting all curves

Click the icon  in title bar of the parameter list area, to delete all the curves.



# Save Template

## Save Template

---

Save the current query conditions as a template for future application.

### Procedure

1. Click “Chart” to enter the corresponding interface.
2. Select parameters of a corresponding device in the plant list to add a parameter curve.
3. Optionally, modify time range and time interval.
4. Click “Save Template” and enter the template name.
5. Click “Confirm” to save the current query template.



# Template Library

## Template Library

---

Directly use the existing query templates.

### Prerequisites

The system has query templates.

### Procedure

1. Click “Chart” to enter the corresponding interface.
2. Click “Template Library” and click “Chart” on the operation bar. The system will automatically return to the “Chart” interface and display curves according to the selected template.



# Report

## Report

---



# Custom Report

## Custom Report

---

Users can create self-defined reports according to demands.

### Procedure

1. Click the menu "Report" to enter the corresponding interface.
2. Click "Add" at the bottom of the custom report to enter the corresponding interface.
3. Select a report type, period, and the indicators that need to be displayed. Click "Add".
4. Click "Save as", enter the report name, and click "Confirm", to add the new report to the custom report.



# Statistical Report

## Statistical Report

Users can select reports of different types according to needs.


Report type	Description
Group report	View reports of all plants of the group
Plant report	View report of a single plant
Report library	View time-of-use yield reports of plant, grid-connection point, and inverter
Analysis Report	View O&M information of the plant

In the following, description is given by using viewing group area yield monthly report as an

### View Report Information

1. Click the menu “Report” to enter the corresponding interface.
2. Click “Group Area Yield Monthly Report” to enter the corresponding interface. Statistics information of the plant on the current month is displayed by default, including today yield, daily equivalent hours, etc.
3. Perform the following operations according to actual conditions.

- View reports of other months

Click the icon  to select the desired date and click “OK”. Click “Search” to view the corresponding statistic data.

- Export report

Click “Export”, select a desired storage location, and click “save” to save the report locally.

- View group compensative yield report

Click “Details” to enter the group compensative yield report interface. Daily, monthly, yearly, and total reports can be accessed.









# Running Record

## Running Record

---

You can view the running record of the cleaning robot.

### Procedure

1. Click the menu "Report" to enter the corresponding interface.
2. Click "Running Record" to enter the corresponding interface.
3. On the left side of the plant list, enter the plant name and click the icon  to view the corresponding plant.
4. Enter the device name, select the device type, click the icon  to select the desired date and click "OK". Click "Search" to view the corresponding statistic data.
5. (Optionally) Click "Export" to save the report locally.



Management

**Management**

---



# Work Order Process

## Work Order Process

Click “Management -> Work Order Process” to enter the corresponding interface, on which you can manage common plant faults and alarms.

输入电站名称

时间范围: 2018-08-22 00:00 - 2019-08-22 23:59 工单编号: 工单编号 故障名称: 故障名称 刷新时间 5min

003\_demo

007\_demo

010\_demo

1808888C的电站

1880011的电站

230测试1048的电站

33

50KTL测试电站

80k\_s2移动-A1806092608的...

8K-1


待处理 已处理 已办结

导出



电站名称	工单	工单状态	待签事务	故障名称	故障设备	汇报人	汇报时间	操作
PV-Z180313001-WIFI电站 型	GD2019032115020005632317	工单关闭	工单评价	孤岛	SG12KTL-M_001_001	sharp001	2019-03-21 15:02:00	导出
PV-Z180313001-WIFI电站 型	GD2019032209250019720577	工单关闭	工单评价	孤岛	SG12KTL-M_001_001	sharp001	2019-03-22 09:25:00	导出
PV-Z180313001-WIFI电站 型	GD2019031617040005461092	工单审批	审批工单	孤岛	SG12KTL-M_001_001	高增柯	2019-03-16 17:04:00	导出
PV-Z180313001-WIFI电站 型	GD2019031413260005596002	工单审批	审批工单	孤岛	SG12KTL-M_001_001	高增柯	2019-03-14 13:26:00	导出
PV-Z180313001-WIFI电站 型	GD2019031409260005823576	工单审批	审批工单	孤岛	SG12KTL-M_001_001	高增柯	2019-03-14 09:26:00	导出
PV-Z180313001-WIFI电站 型	GD2019031409160006515006	工单审批	审批工单	孤岛	SG12KTL-M_001_001	高增柯	2019-03-14 09:16:00	导出
PV-Z180313001-WIFI电站 型	GD2019031108520006408588	工单审批	审批工单	故障	SG12KTL-M_001_001	高增柯	2019-03-11 08:52:00	导出
PV-Z180313001-WIFI电站 型	GD2019030914480005268052	工单审批	审批工单	告警	SG12KTL-M_001_001	高增柯	2019-03-09 14:48:00	导出

### Plant Search Bar

Quick search: enter the plant name and click the icon , to view the corresponding plant list.

Detailed search: click the icon , enter the plant name and device S/N, select power installed, type, and organization, and click “Confirm”, to view the corresponding plant list.

### Refresh Time

The refresh time is 5 min by default (the minimum refresh interval). Tick “Refresh Time”, and click the icon  to increase the value or click the icon  to decrease the value.

### Fault Search Bar

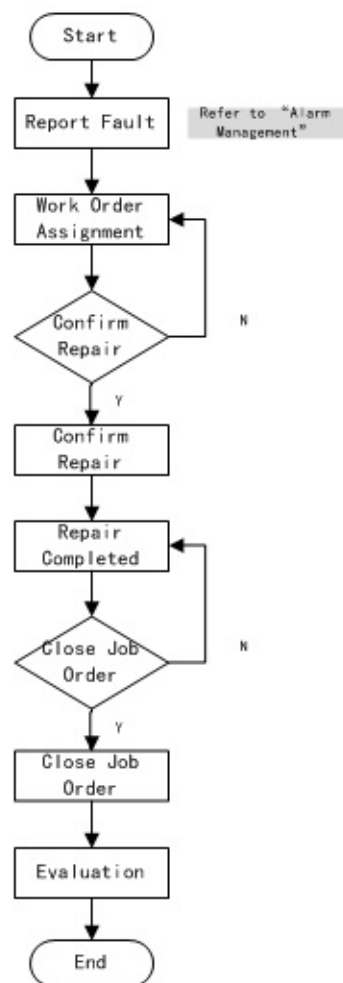
Set time segment and enter job order No. and fault name. Click “Search” to view the corresponding fault list.

### Export Fault List


Click “Export” to export the fault list within specific time segment, where the exported file is in .xlsx format by default.

### Workflow







### Work Order Assignment

1. Click the icon  in the operation bar, to enter the "Assign a Processor" interface.
2. Select the repair time, remind person, and remind method. Fill in comments (optional).
3. Click "Confirm".

### Reallocate Job Order

1. Click the icon  in the operation bar, to enter the "Confirm Repair" interface.
2. Tick "Back" and fill in comments (optional).
3. Click "Confirm".


### Confirm Repair

1. Click the icon  in the operation bar, to enter the "Confirm Repair" interface.
2. Tick "Confirm Repair", and fill in maintenance steps (image uploading is available) and comments (optional).




3.Click “Confirm”.


### **Repair Completed**

- 1.Click the icon  in the operation bar, to enter the “Repair Complete” interface.
- 2.Select close user and remind method, and fill in completion steps (optional) and comments.
- 3.Click “Confirm”.


### **Re-confirm Repair Completed**

- 1.Click the icon  in the operation bar, to enter the “Work Order Closed” interface.
- 2.Set the process conclusion to “Back”, and select a remind method. Fill in comments (optional).
- 3.Click “Confirm”.

### **Close Job Order**

- 1.Click the icon  in the operation bar, to enter the “Work Order Closed” interface.
- 2.Set the process conclusion to “Close”, select a reviewer, and fill in comments (optional).
- 3.Click “Confirm”.

### **Evaluation**

- 1.Click the icon  in the operation bar, to enter the “Maintenance Evaluation” interface.
- 2.Optionally, click “Application of Entering the Knowledge Base” to save the maintenance steps to the knowledge base for future application.
- 3.Rate the processing time, processing quality, and service attitude. Fill in electricity loss (optional) and comments (optional).
- 4.Click “Confirm”.



# Duty Information

## Duty Information

Click “Management -> Duty Info”, to enter the corresponding interface, on which you can view duty information of the group or a single plant and shift duty.

Group

Plant

Record Time : 2018-09-09 00:00 - 2019-09-09 23:59
On Duty Monitor :
Search

Shift Change
On Duty

On Duty Date	Company Name	Duty Ordinal	On Duty Monitor	Take Over Time	Shift Time	On Duty Status	Onduty Log	Operation
2019-01-08	苏美达集团	5555	电站事业部	2019-01-08 15:49	2019-01-14 22:08	Shift Change		

### Search Bar

Set time segment and enter the on duty monitor. Click “Search” to view the corresponding on duty list.

### Operation Bar

- View duty information

Click the icon to enter the corresponding interface. Basic duty information, such as, on duty date, on duty ordinal, and on duty monitor, is displayed. Click “Close” to go back to the previous interface.

- Delete duty information

Click the icon , and a window pops up. Click “Confirm” to delete the duty information.

### Shift Change



- Click “Shift Change” to enter the corresponding interface.
- View information such as on duty date, on duty ordinal, on duty monitor, and operator on duty. Upload related attachments and fill in over duty note.
- Click “Shift Change”, and the on duty status is changed to “Shift Change”.

### Take over Duty

- Click “On duty” to enter the corresponding interface.
- Fill in over duty information.

Parameter	Description
Duty Date*	Date of duty shift, it is the current day by default



On Duty Ordinal	On duty times
On Duty Monitor	Monitor, clicking the icon  to select monitor
Operator On Duty	On duty staff, clicking the icon  to select on duty operator
Take Over Time*	Duty shift time, it is the start time filled in (default)
Shift Time*	Time of taking over the duty
Current Note	Fill in the note for current work
Over Duty Note*	Over duty notes filled in by over duty staff

- indicates unsettable parameters.

3.Click “On Duty”, and the on duty status is changed to “on Duty”.



# Onduty Log

## Onduty Log

Click “Management -> Onduty Log”, to enter the corresponding interface, on which you can view duty logs of the group or a single plant.

Group Plant

Record Time : 2018-09-09 00:00 - 2019-09-09 23:59
Operator On Duty :
Recording Content :
Record Type : All
Search

Add Export


Company Name	Operator On Duty	Record Type	Recording Content	Record Time	Operation
苏美达集团	电站事业部	Device Operating Status	##	2019-04-03 20:38	

### Search Bar



Set time segment, enter operator on duty and recording content, and select record type. Click “Search” to view the corresponding duty logs.

### Operation Bar

- Modify onduty logs

1.Click the icon  to enter the corresponding interface.

2.Fill in related information.

Parameter	Description
Operator On Duty *	On duty staff, clicking the icon  to select on duty operator
Record Type *	Click the icon  to select record type
Record Time	Time of the record
Uploading Appendix	Upload related attachment
Recording Content *	Fill in specific content of the log

\*indicates fields that must be filled in.

3.Click “Submit”.

- Delete onduty log



Click the icon  , and a window pops up. Click “Confirm” to delete the corresponding log.

### **Add Onduty Log**

- 1.Click “Add” to enter the corresponding interface.
- 2.Fill in related information, where reference can be made to the table described in modifying onduty log
- 3.Click “Submit”.

### **Export Onduty Log**

Click “Export”, select a desired storage location, and click “save” to save the log locally.



# Electrical Kind of Ticket

## Electrical Kind of Ticket

To ensure personal safety and avoid accidents from inadvertent operations, operators must use operation tickets and work tickets in a correct way when performing electrical operations such as maintenance, troubleshooting, and commissioning.

Description is given by using first work ticket as an example, which is similar to that of second work ticket.

Click “Management -> Electrical kind of ticket”, to enter the corresponding interface.

### Search Bar

Set time segment and enter No. and person in charge. Click “Search” to view the corresponding first work tickets.

### Add First Work Ticket

1. Select plants and click “Add”, to enter the corresponding interface.
2. Fill in related information.
3. Click “Save”.

### Copy First Work Ticket

There is at least one work ticket.

1. Select the desired work ticket and click “Copy”.
2. Click “Confirm” on the pop-up window.

### Delete First Work Ticket

1. Select desired work ticket(s) and click “Delete”.
2. Click “Confirm” on the pop-up window.

Only first work tickets in deactivation state can be deleted.

### Start the Process




The first work ticket is in deactivation state.

1. Select the desired first work ticket, and click “Start the Process”.
2. Select process version, “Simplified version” or “Full version “.

### **Node Staffing**

The first work ticket is in deactivation state.

1. Select the desired first work ticket, and click “Node Staffing”.
2. Select process version, “Simplified version” or “Full version”. The setting interface pops up.
3. Set person in charge for each node in the flowchart.
4. After finishing setting, click the icon  in the upper right corner.

### **Export First Work Ticket**

1. Select the desired first work ticket and click “Copy”. A prompt window pops up.
2. Select a storage location and click “Save” to save the first work ticket locally.

### **Print First Work Ticket**

1. Select the desired first work ticket and click “Print”. A window displaying detailed work ticket information pops up.
2. Click “Print” to select a printer and perform related settings.
3. Click “Print”.



# Smart Alarm Analysis Setting

## Smart Alarm Analysis Setting

Click “Management -> Smart Alarm Analysis Setting” to enter the corresponding interface.

Enter Plant Name

Alarm Name

Open Status: All

Search

Help File

180888C的电站	NO.	Alarm Name	Alarm Target	Open Status	Operation
1880011的电站	1	Plant Stop Operation	Plant	Shield	
190999C的电站	2	DC Bus Box PV Array Current Steady Value	String	Shield	
230测试104的电站	3	Low Efficiency on String Inverter PV Array	String	Shield	
33	4	DC Bus Box PV Array Low Efficiency	String	Shield	
50KTL测试电站	5	DC Converter Box N-way Branch Current Is Zero or Low	String	Shield	
80k_s2移动-A1806092608的...	6	The Group N-way Tributary Current Is Zero or Low	String	Shield	
8888YG的电站	7	Inverter Stops Running	Inverter	Shield	
8K-1	8	Communication Interruption	General Information	Open	
8K-2	9	Plant Operation Reliability	Plant	Shield	
	10	String Inverter Operation Reliability	Inverter	Shield	
	11	DC Bus Box Operation Reliability	Combiner Box	Shield	
	12	PV Array Constant Current of String Inverter	String	Shield	

### Search Bar

Fill in alarm name, select open status, and click “Search”, to view corresponding alarm list.

### Edit Smart Alarm Analysis Setting

- 1.Click the icon to enter the setting interface.
- 2.Modify the open status, judgment condition, and judgment rule.

Item	Judgment Condition	Judgment Rule
Plant stops operation	7:00-19:00	Plan power/Load < 1% (default value)
String current constant value of DC combiner box	Plant power/Load > 30%	The Nth current keeps unchanged within 60/120 minutes.
Low string inverter string efficiency	Plant power/Load > 30%	Average deviation of the Nth input current in the string inverter < -20%
Low DC combiner box string efficiency	Plant power/Load > 30%	Average deviation of the Nth input current in the string inverter < -20%



The PVnth current of DC combiner box is zero or low	Plant power/Load > 30%	The Nth current is zero or less than 1A.
The PVnth current of string inverter is zero or low	Plant power/Load > 30%	The Nth current is zero or less than 1A.
Inverter stops running	Plant power/Load > 30%	Output power < 1% of installed power
Communication interruption	7:00-19:00	Interruption Duration (Minute) = 60 min
Plant operation reliability	Plant power/Load > 30%	General: 5% < inverter output dispersion ratio ≤ 10% Comparatively poor: 10% < inverter output dispersion ratio ≤ 20% Poor: inverter output dispersion ratio > 20%
String inverter operation reliability	Plant power/Load > 30%	General: 5% < inverter input dispersion ratio ≤ 10% Comparatively poor: 10% < inverter input dispersion ratio ≤ 20% Poor: inverter input dispersion ratio > 20%
DC combiner box operation reliability	Plant power/Load > 30%	General: 5% < combiner box input dispersion ratio ≤ 10% Comparatively poor: 10% < combiner box input dispersion ratio ≤ 20% Poor: combiner box input dispersion ratio > 20%
String current constant value of string inverter	Plant power/Load > 30%	The Nth current keeps unchanged within 60/120 minutes.

3. Apply the configuration to one or more plants.

- Apply it to one plant

Click “Confirm”.

- Apply it to several plants

Click “Confirm and Copy to Other Plants”, select desired plant(s), and click “Confirm”.



### **View Help File**

Click “Help File” to view detailed description of the function.



# Inverter Parameter Setting

## Inverter Parameter Setting

---



Click “Management -> Inverter Parameter Set” to enter the parameter setting interface, on which you can set device parameters.

## Plant List

View information on plants, devices, and measuring points of the current user.

Users can search for desired devices by setting corresponding conditions.

命令行设置、初始并网设置、常用设置、高级参数设置和任务列表操作按钮。 The operation bar includes buttons such as Command line parameters setup , Initial Grid Connection, Common parameter settings , Advanced settings, and Task List.

In the device information list area, you can view information such as plant name, device name, device S/N, and inverter model. In addition, you can query inverter parameters and further view history tasks.



# Initial Grid Connection Setting

## Initial Grid Connection Setting

---

On the initial grid connection interface, you can set parameters for the inverter, such as “Country (region) selection”, “Grid type”, and other parameters related to the specific inverter type.

### Prerequisites

The current user has the permission of setting initial grid-connection parameters.

The device supports of initial grid-connection setting.

### Procedure

1. Select a desired plant from the left plant list.
2. Select desired plant devices from the device information list.
3. Click “Initial Grid Connection” or “Unset” to enter the corresponding interface.
4. Select country, grid type, and other related parameters, and then click “Apply Settings” on the bottom of the interface.

When the country (region) selects Australia, set the network service provider and grid type as

5. Enter the login password on the pop-up window and enter the setting interface.
6. Enter the task name on the “Settings” interface, select “Instruction valid period”, and click “Confirm”, so that the system generates parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h. If the delivered instruction has not been executed within the set time, the instruction will turn to be invalid.
7. Automatically enter the “Task list” interface. Click “View” on the operation bar to view the corresponding task. Click “Cancel the task” to cancel the latest parameter setting.



# Advanced Parameter Setting

## Advanced Parameter Setting

---

Users can set parameters such as restore default parameter, 10-min over-voltage protection and over-frequency derating.

Prerequisites

### Prerequisites


The current user has the permission of advanced parameter setting.

The device supports the advanced parameter setting.

### Introduction

The initial grid-connection setting has been performed on the device.

### Procedure

1. Select a desired plant from the left plant list.
2. Select desired plant devices from the device information list.
3. Click “ -> Advanced settings” to enter the corresponding interface.
- 4.If parameter settings cannot be performed on the inverter, click “One-click Update” to access the “Firmware Update” interface. Click “Confirm”, so that the inverter will be upgraded automatically. Click “Firmware Update -> View Task History” to view the upgrade progress.
- 5.After upgrading the inverter, click “Advanced Settings” to access the inverter parameter setting interface. In case, parameter settings still cannot be performed on the inverter, click “Customer Feedback”, to enter the “Feedback” interface, on which you can submit feedback.

If parameter settings can be performed on the inverter, skip performing step 4 and step 5.

1. Set system parameters/protection parameters/power control parameters.

Energy management parameter and battery parameter are available for energy storage inverters.

2. Click “Apply settings”.
3. Enter the login password on the pop-up window and enter the setting interface.
4. Enter the task name on the “Settings” interface, select “Instruction valid period”, and click



“Confirm”, so that the system generates parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

If the delivered instruction has not been executed within the set time, the instruction will turn to be invalid.

1. Automatically enter the “Task list” interface. Click “View” on the operation bar to view the corresponding task. Click “Cancel the task” to cancel the latest parameter setting.



# Command Line Parameter Setup

## Command Line Parameter Setup

---


You can set parameter address, data type, and set value for the inverter through the command line parameters setup.

### Prerequisites

The current user has the permission of command line parameters setup.

The device supports of the parameter setting.

### Procedure

1. Select a desired plant from the left plant list.
2. Select desired plant devices from the device information list.
3. Click “ -> Command line parameters setup” to enter the corresponding interface.
4. Click “Add” to fill in parameter address, data type, and set value.
5. Tick desired instructions and click “Apply settings”.
6. Enter the login password on the pop-up window and enter the setting interface.
7. Enter the task name on the “Settings” interface, select “Instruction valid period”, and click “Confirm”, so that the system generates parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

If the delivered instruction has not been executed within the set time, the instruction will turn to be invalid.

1. Automatically enter the “Task List” interface. Click “View” on the operation bar to view the corresponding task. Click “Cancel the task” to cancel the latest parameter setting.




# View History Tasks

## View History Tasks

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You can view parameter setting history of a single device or several devices.

### Procedure

1. Click “Task List” to enter the task list interface.
2. Select a time range, enter the task name, and click  , to view the corresponding history tasks.
3. Click the “View” button on the operation bar to view corresponding information, such as execution result, execution instruction, and read-back value.



# General Parameter Setting

## General Parameter Setting

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Users can set specific parameters for the inverter, such as start/stop, power generation compensation, standby time, etc.

### Prerequisites

The user has the permission of general parameter setting.

The device supports the parameter setting.

### Background information

The initial grid-connection setting has been performed on the device.

### Procedure

1. Select a desired plant from the left plant list.
2. Select desired plant devices from the device information list.
3. Click “Common parameter settings” to enter the corresponding interface.
4. Set system parameters/protection parameters/power control parameters.

Energy management parameter and battery parameter are available for energy storage inverters.

5. Click “Apply settings”.
6. Enter the login password on the pop-up window and enter the setting interface.
7. Enter the task name on the “Settings” interface, select “Instruction valid period”, and click “Confirm”, so that the system generates parameter delivery task. The “Instruction valid period” can be set to 0.5h, 1h, or 72h.

If the delivered instruction has not been executed within the set time, the instruction will turn to be invalid.

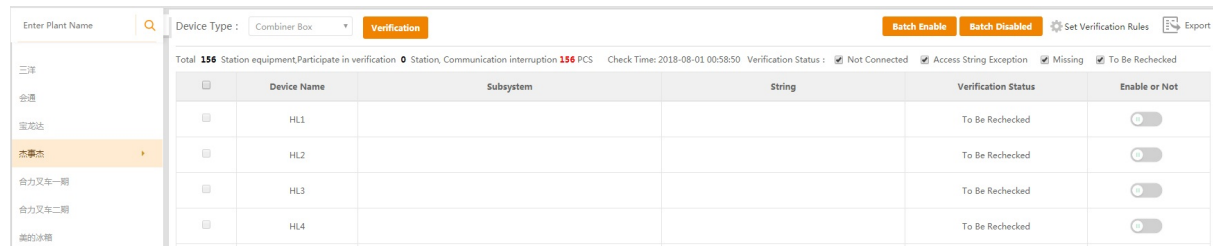
8. Automatically enter the “Task list” interface. Click “View” on the operation bar to view the corresponding task. Click “Cancel the task” to cancel the latest parameter setting.



# String Verification

## String Verification

Click “Management -> String Verification” to enter the corresponding interface.



### Set Verification Rules

The current user has the permission of setting verification rules.

1. Click “Set Verification Rules” to enter the corresponding interface.
2. Fill in configuration information.

The parameters "No Access Rules" and "Missing Rules" must be the same in value.

3. Apply the setting to one or more plants.

- Apply it to one plant

Click “Confirm”.

- Apply it to several plants


Click “Confirm and Copy to Other Plants”. Select desired plant(s) and click “Confirm”.

### Verification

The function supports only string inverter and the combiner box by default.

1. Select device type and click “Verification”.
2. Abnormal strings will be displayed on the interface. If there is no abnormal string, “No abnormal string was found in your plant string verification.” is displayed.

### Enable Single String

Click the icon  to enable the single string.

### Enable Strings in Batch



Select several strings and click “Batch Enable” to enable them.

### **Disable Strings in Batch**

Select several strings that have been enabled and click “Batch Disable” to disable them.

### **Export Verification Information**

Click “Export”, select a desired storage location, and click “save” to save the verification information locally.



## Firmware Update

## Firmware Update

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## Interface Description

## Interface Description

Click “Management -> Firmware Update” to enter the corresponding interface, on which you can upgrade plant software.

[illegible]

## Plant List

You can view the plant information.

## Device Search Bar

Users can search for desired devices by setting corresponding conditions.

## Operation Bar

The operation bar includes buttons “Firmware Update” and “View Task History”.

## Device information list

You can view information such as plant name, device S/N, device type, device model, online state, current version, etc.



# Firmware Update

## Firmware Update

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On this interface, you can remotely upgrade device software of the plant system.

### Prerequisites

The current user has the permission of firmware upgrade.

The device supports remote upgrade function.

### Procedure

1. Select plants from the left plant list. Devices of the selected plants are displayed in the display area.

2. Select desired devices in the device information list area. (Batch selection is supported)

You can upgrade devices of the same type and same model in batch.

3. Optionally, select “Device type”, “Device model”, and “Device S/N”, and click “Search”. The interface will display corresponding devices. Select the desired ones.

Currently, you can select device S/N in the following two manners:

- Manually enter the device S/N: enter the device S/N in the “Device S/N” field, where S/Ns are separated by commas.
- Batch import: Click the “Device S/N” field and then “Select file” to import the desired file.

4. Click “Firmware update”, after which the “Upload the upgrading package” window pops up.

5. You can update device in the following two manners.

- Select “Online Upgrade Package”, click “Update”.
- Select “Local Upgrade Package”, Click “Select a Firmware File” to select the upgrade package and click “Update”.

Before select “Local Upgrade Package”, the user has got the upgrade file and has saved it locally. The upgrade package is the .zip file.

6. Enter the login password and wait for the uploading. You can view history upgrade information by clicking “View Task History” after finishing upgrade.









# Viewing Task History

## Viewing Task History

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You can view the upgrade history.

### Procedure

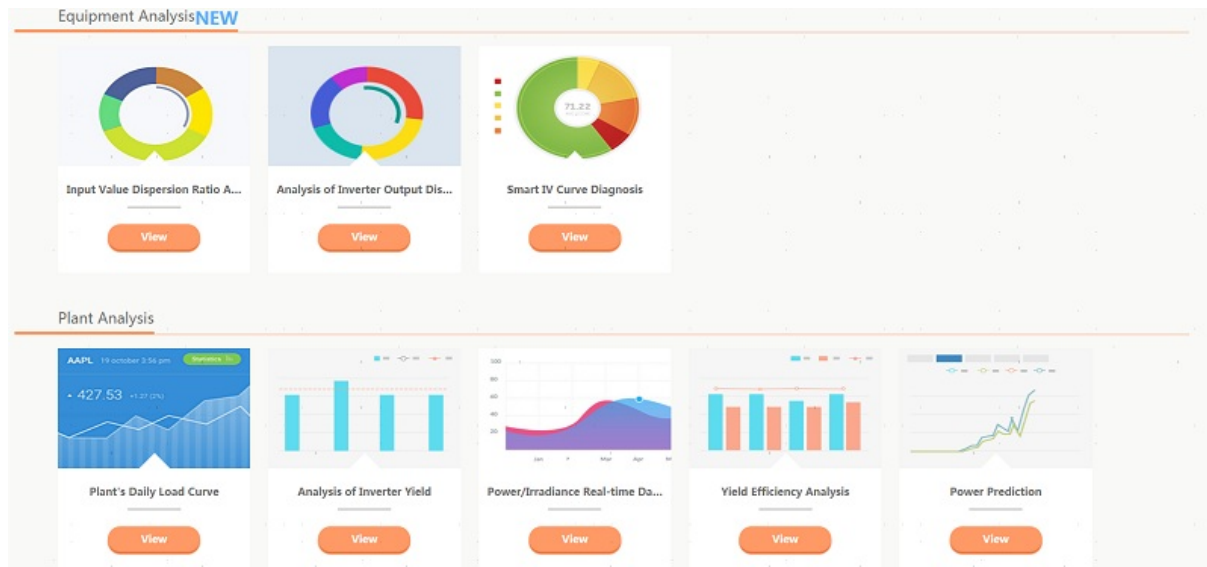
1. Click  to enter the corresponding interface.
2. Select time range, device type, device model, and target software version, and click , to view the corresponding history tasks.



# Intelligent Analysis

## Intelligent Analysis

Click “Intelligent Analysis” to enter the corresponding interface, on which real-time analyses on plant or device performance are displayed.






# Input Value Dispersion Ration Analysis


## Input Value Dispersion Ration Analysis

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Click “Input Value Dispersion Ratio Analysis” to enter the corresponding interface (“Analysis of Input Discrete Rate of Inverter” interface by default), on which discrete rate pie chart and table are displayed.

### View Input Discrete Rate on Other Day

Click the icon  to select the desired date and click “OK”.


Click the icon  to view the input discrete rate on the previous day.

Click the icon  to view the input discrete rate on the next day.

### Hide Input Discrete Rate Chart

Click “Hidden Chart” to hide the discrete chart. Click “Display Chart” to display the discrete chart.


### Download Input Discrete Rate Chart

Click the icon , and a “Save as” window pops up. Select a storage location and click “Save”, to save the discrete rate chart locally.

### Toggle between Average Current and Average Normalized Power



Click the icon  icon to toggle between average current and average normalized power.

### Set Occlusion Time

1. Click the icon  corresponding to the string x, and the window “Set occlusion time” pops up.



2. Click “Add”, fill in start time and end time, and click the icon  to save the operation.

3. Perform the following operations if necessary.

- Click “Add” and repeat the foregoing step.
- Click the icon  to modify the setting.
- Click the icon  to delete the setting.
- Click “Close” to quit the setting.


### Set Occlusion Time in Batch





1. Click the icon  corresponding to multiple strings, click the icon  above, and the window "Batch set occlusion time" pops up.

2. Click "Add", and fill in start time and end time.

3. Perform the following operations if necessary.

- Click "Add" and repeat the foregoing step.
- Click the icon  to delete the setting.
- Click "Save" to save the operation.

### **Clear Occlusion Time in Batch**

1. Click the icon  corresponding to multiple strings, click the icon  above, and the prompt window pops up.

2. Click "Confirm", an information note window pops up, and click "Confirm" to finish the operation.

### **Export Input Discrete Rate Chart**

Select discrete rate range and click "Export". Select a storage location and click "Save", to save the discrete rate chart locally.




# Analysis of Output Discrete Rate of Inverter


## Analysis of Output Discrete Rate of Inverter


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Click “Analysis of Output Discrete Rate of Inverter” to enter the corresponding interface, on which discrete rate pie chart and table are displayed.

### View Output Discrete Rate on Other Day

Click the icon  to select the desired date and click “OK”.

Click the icon  to view the output discrete rate on the previous day.

Click the icon  to view the output discrete rate on the next day.

### Hide Output Discrete Rate Chart

Click “Hidden Chart” to hide the discrete chart. Click “Display Chart” to display the discrete chart.

### Export Output Discrete Rate Chart

Click “Export”, select a desired storage location, and click “save” to save the discrete rate chart locally.

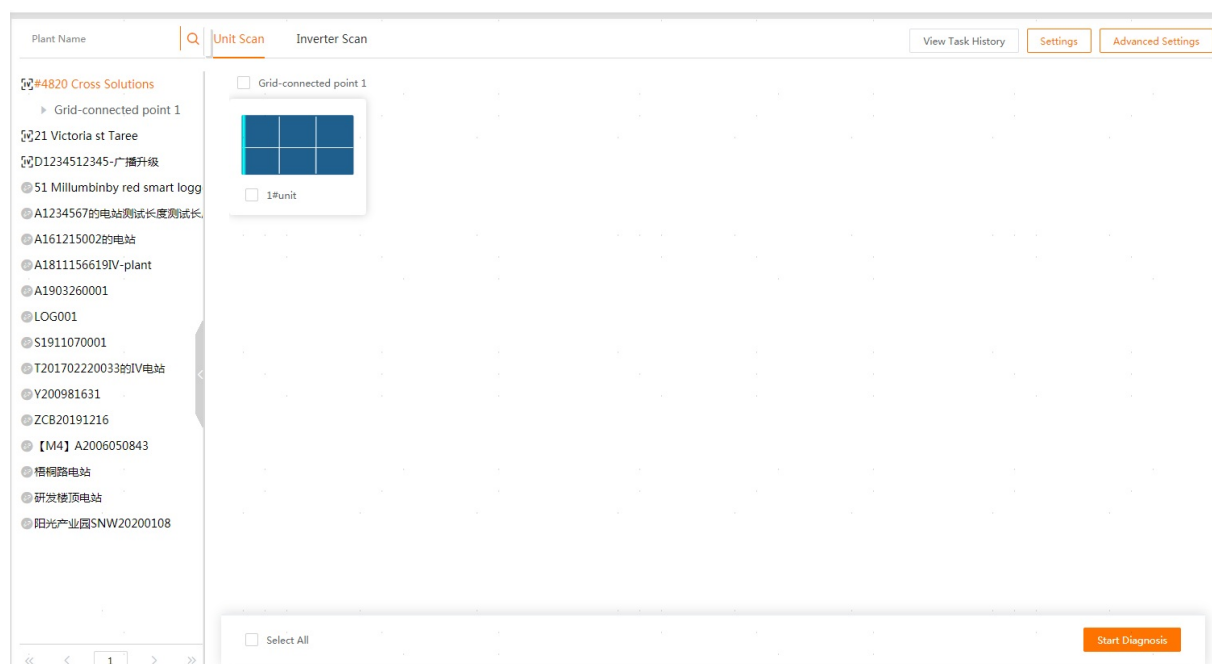


# Smart IV Curve Diagnosis

## Smart IV Curve Diagnosis

Scan PV module IV curve in online manner, automatically locate faulty PV modules through the diagnostic algorithm analysis, and generate diagnostic reports and O&M advice, etc. thereby greatly improving O&M efficiency and power generation.

Click “Smart IV Curve Diagnosis” to enter the corresponding interface, on which you can perform unit level scanning and inverter level scanning.



### Parameter Setting

This section describes how to set plant or inverter parameters.

### Prerequisites

The user has the permission of the “Smart IV Curve Diagnosis”.

### Procedure

1. Select the desired plant from the left plant list.
2. Click “Settings” to enter the “IV Intelligent curve analysis” interface. Enter the “Plant parameter setting” interface by default.
3. Perform the following operations if necessary.

- Set plant terrain on the “Parameter Setting” interface. After finishing the parameter setting, click







“Confirm” to save the operation.

- Click the tab “Unit parameter setting” or “Inverter Parameter Set”. Click “Settings” on the operation bar, to enter the corresponding interface, on which you can set parameters.

a.Single setting: After finishing parameter setting, click “Confirm”.

b.Batch setting: After finishing parameter setting, click “Determine and Batch Apply”. Select the inverters that require the same settings, click “Confirm”.

- Click the tab “PV module management”, to add, delete, or view PV module information.
  - Query PV module: enter PV module manufacturer, select module type, and enter module model. Click the icon  to view corresponding PV modules.
  - Add PV modules: click “Add” to enter the corresponding interface. Fill in corresponding information and click “Confirm”.
  - View PV module information: click the icon  in the operation bar to enter the corresponding interface, on which you can view detailed information on the PV modules.
  - Modify PV module information: click the icon  in the operation bar to enter the corresponding interface, on which you can modify the information on the PV modules.
  - Delete PV module information: click the icon  in the operation bar, click “Confirm” on the pop-up window, and click “Confirm” on the prompt window to finish the operation.
  - Batch delete: select multiple pieces of PV module information, click “Batch Delete”, and click “Confirm” to finish the operation.

## Advanced Settings

### Prerequisites


The user has the advanced permission of “Smart IV Curve Diagnosis”.

### Procedure

1.Select the desired plant from the left plant list.

2.Click “Advanced Settings”, to enter the corresponding interface.

3.Perform the following operations if necessary.

- Query advanced parameter settings: enter parameter and parameter name, and click the icon , to view the corresponding setting list.
- Add advanced parameter settings: click “Add” to enter the corresponding interface. Fill in parameter, parameter name, and parameter value, and click “Save”.



Modify advanced parameter settings: click the icon 

Delete advanced parameter settings: Click the icon 

## IV Intelligent Curve

This section describes how to scan IV curve and view the diagnosis analysis.

### Prerequisites



The user has the permission of the “Smart IV Curve Diagnosis”.

### Unit Scan

1. Select the desired plant from the left plant list.
2. Enter the “Unit Scan” interface by default.
3. Select unit devices and click “Start Diagnosis” in the lower right corner.
4. Enter login password on the pop-up window and click “Confirm”.

The system will judge whether the device parameters have been configured. If not, a “Prompt” window will pop up. Click “Confirm” to jump to the corresponding interface and perform parameter settings.

5. After the instruction is delivered successfully, the unit state is changed to “Scanning” and you can view the scanning progress.
6. After the scanning, click “Diagnosis Report” to view the scanning results.
7. The upper part of the interface displays the examination report and the number of abnormal strings.

Click “New Report”, select report type and unit equipment. Click “Confirm” to enter the “Report List” interface. Click the icon  to preview the diagnostic report online. Click the icon  to download the diagnostic report locally.

Click “Report List” to query, preview online and download reports.

The lower part displays the tab “IV Diagnosis Results”, on which string information is displayed. Click “View” to enter the “String diagnosis and analysis” interface, on which detailed string information and curves are displayed.

8. Click “IV curve” to view IV curves of all strings.

### Inverter Scan

1. Select the desired plant from the left plant list.



2. Enter the “Unit Scan” by default.
3. Click “Inverter Scan” to scan a single inverter or several inverters.
4. Select inverters and click “Start Diagnosis” in the lower right corner.
5. Refer to step 4 to step 8 in unit level scanning.

Residential PV plant and residential energy storage plant only have inverter level scan.

## View Task History

You can view the IV scanning records.

### Procedure

1. Click “View Task History” to enter the corresponding interface.
2. Select time range and task type, enter task name, and click “Search”, to view the corresponding history tasks.



# Power Plant Analysis


## Power Plant Analysis


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Plant analysis includes daily load curve of plant, yield analysis (inverter), yield efficiency analysis, etc. Description is given by using daily load curve of plant as an example.

Click “Daily Load Curve of Plant” to enter the corresponding interface, on which plant running curve and alarm information are displayed.

### Query Daily Load Curve on other Day

Click the icon  to select the desired date and click “OK”.


Click the icon  to view daily load curve on the previous day.

Click the icon  to view daily load curve on the next day.

### Hide Daily Load Curve

Click “Hidden Chart” to hide the daily load curve. Click “Display Chart” to display the daily load curve.

### Download Daily Load Curve

Click the icon , and a “Save as” window pops up. Select a desired storage location and click “Save”, to save the daily load curve locally.

### Export Alarm Information

Select alarm types and click “Export”, to save the alarm information locally.