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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.

### 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 V1.5.7.20210629. Screenshots are for reference only, and actual interfaces may differ.

# 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”, Australian users select “Australian server”, and 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.

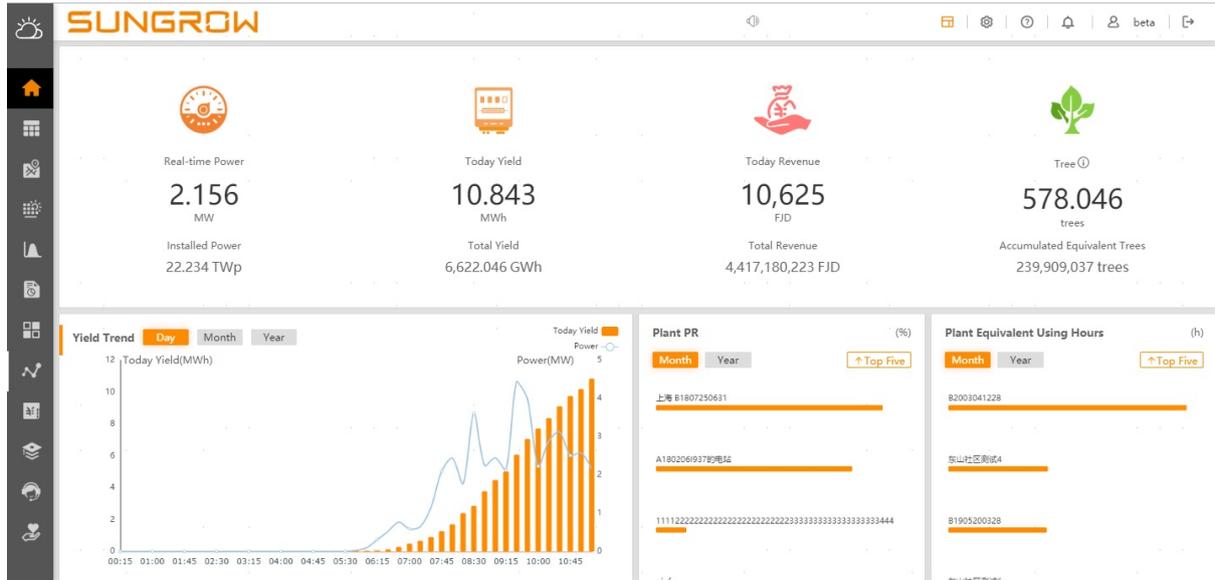
#### Procedure

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.
Report	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.

# Plant List

## Plant List

Click "Plant list" to enter the corresponding interface, on which information such as power installed, real-time power, daily yield, alarm, and communication is displayed.

No.	Alarm	Communication	Plant Name	Installed Power	Real-time Power	Daily Yield	Total Yield	Equivalent Hours	Transient-radiation	PR	View Unit
1			D1234512345-广东升级	..	0W(Inverter)	Today 0kWh/Yday 0kWh(Inverter)	71.736MWh	Today 0.00h	--	--	
2			#4820 Cross Solutions	..	0W(Inverter)	Today 57.9kWh/Yday 32kWh(Inverter)	11.95MWh	Today 2.32h	--	--	

## Plant Search Bar

Quick search: select alarm status, enter the plant name, device S/N and power installed, click to view the corresponding plant list.

Detailed search: select alarm status, enter the plant name, device S/N and power installed, click . Select plant type and organization name, click to view the corresponding plant list.

## Create Plant

Click on the homepage to enter the corresponding page by default.

## Create Plan

A single plant can be created. Perform the following operations according to actual condition.

### Viewing Basic Plant Information

Parameter name	Description
* Plant name	The name of a plant is the device serial number by default.
*Plant type	Click  to select the corresponding plant type.
*Installed power ( kWp )	Input installed power.
*Country (Region)	Click  to select the country (region) of the plant.
*Time zone	Click  to select the time zone where the plant is located.
*Grid-connection type	Click  to select the corresponding grid-connection type.

Grid-connection date	Click  to select the grid-connection date.
Plant picture	Click  to upload a plant picture.

Note: \* indicates required fields.

### Plant location

Plant location, which can be added in two ways:

- Manual entry: Manually enter the plant location in the input box;
- Automatic access: Click on the map to automatically obtain the location and longitude and latitude information of the plant.

- Click  in the lower-right corner of the map or slide the mouse wheel up to zoom in the map. Click  or slide the mouse wheel down to zoom out the map.

Parameter name	Description
*Plant address	Fill in the specific address of the plant
Postcode	Fill in the postcode of the plant location
*Longitude	Fill in the longitude of the plant location
*Latitude	Fill in the latitude of the plant location

Note: \* indicates required fields.

### Owner Information

Owner's mobile phone: used to receive SMS

### Configure Tariff (Optional)

Parameter name	Description
Unit	Click  to select the tariff unit.
	The price of electricity sold to the grid. Enter tariffs in either of the following ways.

Feed-in tariff	<ol style="list-style-type: none"> <li>1. Enter feed-in tariff.</li> <li>2. Turn on time-of-use tariff and fill in the feed-in tariff in different time segments.</li> </ol>
Consumption tariff	<p>The price of electricity purchased from the grid. Enter tariffs in either of the following ways :</p> <ol style="list-style-type: none"> <li>1. Enter grid tariff.</li> <li>2. Turn on time-of-use tariff and fill in the grid tariff in different time segments.</li> </ol>

### Add Communication Device (Optional)

Communication devices can be added in either of the following ways.

- Manually add: Click  to select the device model, enter the S/N of the communication device, and click Add.
- Scan QR Code: Click Identify QR code to upload a picture of the device's QR code or drag the image to the QR code identification box.

Click "Create Plant" below to finish adding.

### Create Plants in Batch

Import plants in batches. Perform the following operations according to actual condition.

#### Plant Information

- Fill in the parameters and click Next to enter the batch import page.

Parameter name	Description
*Plant type	Residential
*Country (Region)	Click  to select the country (region) of the plant.
*Time zone	Click  to select the time zone where the plant is located

#### Batch Import:

- Click to download the template to local and enter the plant information according to the instruction in Excel and save it.
- Click Batch Import and select the edited Excel file to upload.
- Click Create Plant below to enter the overview page.

#### Overview

To view information about the plants that are being created.

- Click Continue Batch Plant Creation to continue with the batch creation.
- Click Complete. Create Plants in Batch finishes.

## Filter Columns

Click  to check the indexes needed to be checked, such as communication, transient irradiance, PR values, etc.

## Refresh Interval

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

Click  to refresh the plant list immediately.

## Plant Information List

Click the plant name to enter the device information interface of the plant by default. Click “Overview” tab to enter the single plant overview interface.

Click the alarm icon to jump to the alarm management interface.

Click  to jump to the “Plant Unit” interface.

Click  to reorder the list.

## IV Curve Online Diagnosis

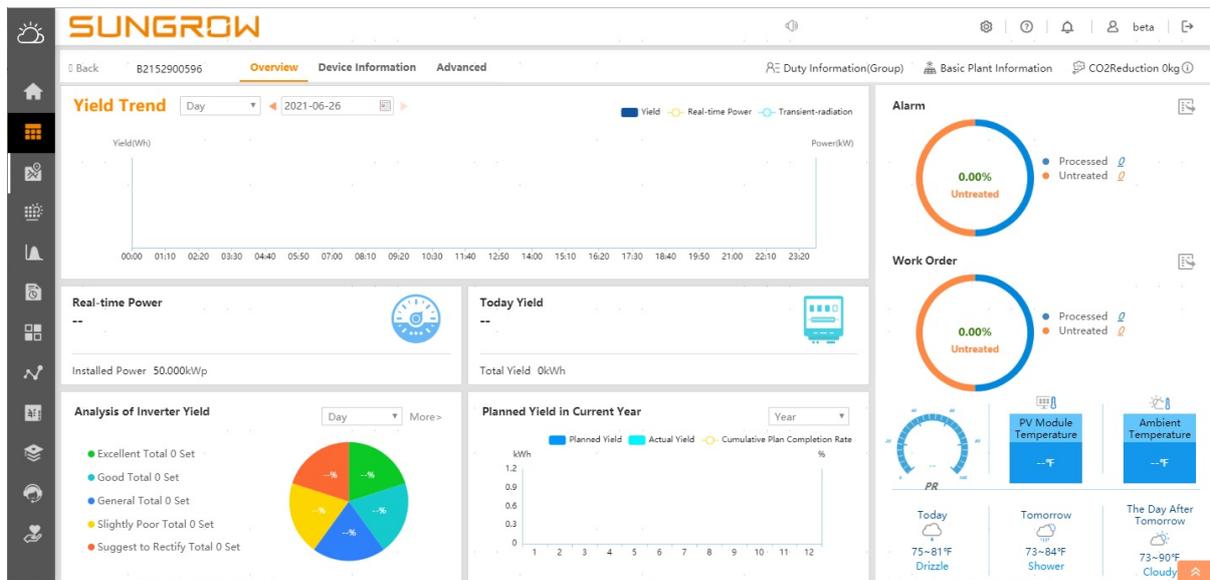
Click the plant name to view the detailed plant information.

Click “Advanced” to enter the corresponding interface, on which you can perform unit level scanning and inverter level scanning(See “Intelligent Analysis - Smart IV Curve Diagnosis”).

# Single Plant Home

## Single Plant Home

Click “Plant List” to enter the corresponding interface, and click the plant name to enter the device information interface of the plant by default. Click “Overview” tab to enter the single plant overview 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)

Daily yield analysis is displayed on the interface by default. Click the icon  to switch to monthly yield analysis 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.

Map

Map

**Map**

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# 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.
  - Slide the mouse wheel to zoom in or out of the map.

# 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 the icon  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

**Plant**

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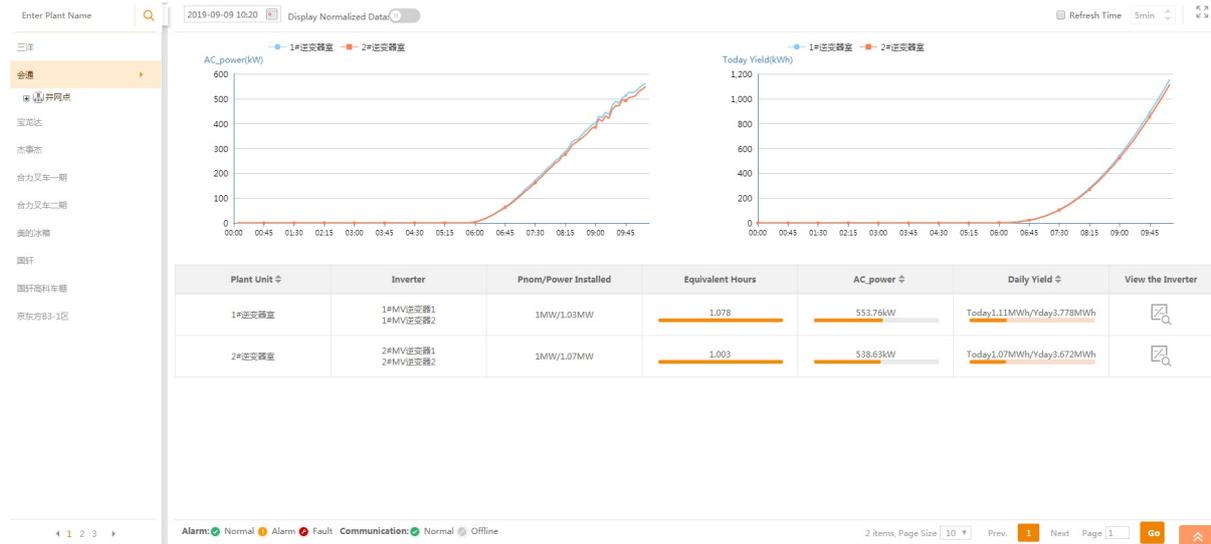




# Plant Unit

## 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 to view the corresponding plant list.

Detailed search: Move the cursor to , click that slides out, enter the plant name and device S/N. Tick “Installed Power”, “Plant Type” and “Company Name” and click “Comfirm” to view the corresponding plant list.

### Refresh Interval

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

### Display Normalized Data

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

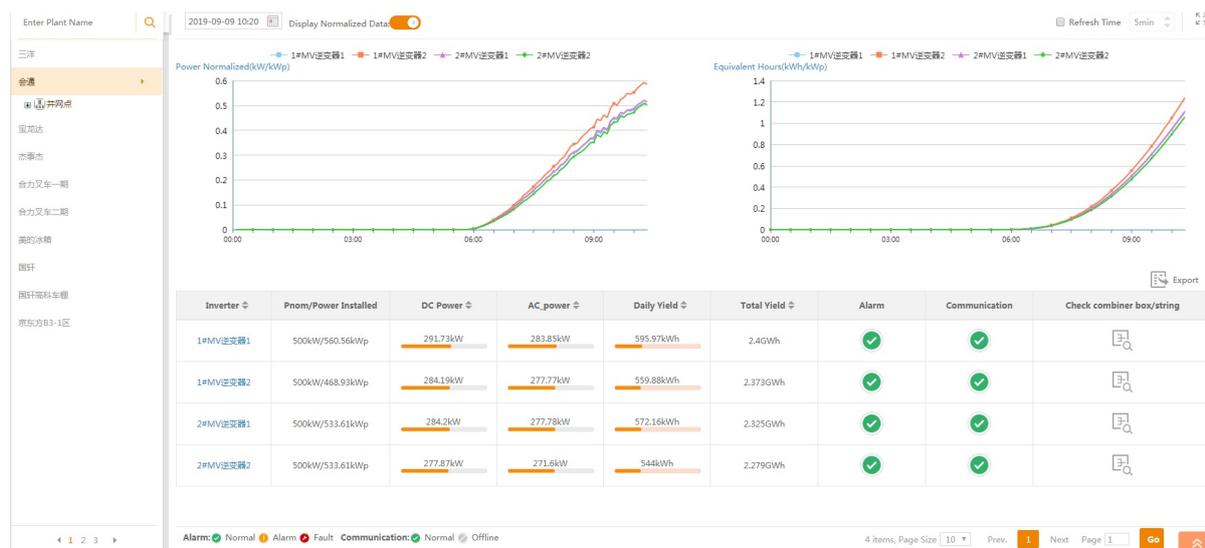
### View the Inverter

Click  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 🔍, to view the corresponding plant list.

Detailed search: Move the cursor to 🔍, click ⏏ that slides out, enter the plant name and device S/N. Tick “Installed Power”, “Plant Type” and “Company Name” and click “Comfirm” to view the corresponding plant list.

### Refresh Interval

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

### Display Normalized Data

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

### Check Combiner Box/String

Click  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 the general information, active fault, fault history, chart and remote signaling status. 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.

Combiner Box	Total Current(A)	Bus Voltage(V)	Internal Temperature (°C)	Alarm	Communication	SPD	String Current
HL25	82.40	572.00	43.10	✓	✓	!	🔍
HL26	74.40	558.60	41.30	✓	✓	!	🔍
HL27	80.20	572.30	42.10	✓	✓	!	🔍
HL28	83.70	574.70	43.00	✓	✓	!	🔍
HL29	57.60	571.40	44.60	✓	✓	!	🔍
HL30	42.30	566.60	43.00	✓	✓	!	🔍
HL31	79.60	575.80	45.30	✓	✓	!	🔍
HL32	72.90	576.80	45.50	✓	✓	!	🔍
HL33	83.20	576.00	45.00	✓	✓	!	🔍
HL34	62.60	574.20	44.90	✓	✓	!	🔍

### 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 Interval

The refresh interval is 5 min by default (the minimum refresh interval). Tick “Refresh Interval”, and click  to increase the value or click  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 displays the SUNGROW Alarm Management interface. At the top, there is a search bar for plant names and a filter bar for alarm types and processing status. The main area shows a table of active alarms with columns for Plant Name, Alarm Type, Fault Code, Alarm Name, Device Interval, Device Name, Status, Occurrence Time, and Operation. A sidebar on the right shows a list of alarm processing statuses: Unconfirmed, Pending, Processing, and Resolved.

Plant Name	Alarm Type	Fault Code	Alarm Name	Device Interval	Device Name	Status	Occurrence Time	Operation
XIANGSBSBSB	Alarm	72	System Alarm	XIANGSBSBSB	SG136TX(COM1-002)_001_008	Unconfirmed	2021-06-26 13:35:49	[Icons]
A2003091200	Fault	322 623	System Fault	远程维护-A2003091200	Energy Storage System_001_001	Unconfirmed	2021-06-25 15:23:11	[Icons]
W20190919666	Fault		Shut Down	Grid-connected point 1_1#unit	SG40KTL-M-34_001_034	Unconfirmed	2021-06-24 21:06:25	[Icons]
W20190919666	Fault	10	Grid Power Outage	Grid-connected point 1_1#unit	SG40KTL-M-34_001_034	Unconfirmed	2021-06-18 14:46:25	[Icons]
XIANGSBSBSB	Fault	36	System Fault	XIANGSBSBSB	SG136TX(COM1-004)_001_002	Unconfirmed	2021-06-15 11:15:15	[Icons]
XIANGSBSBSB	Alarm	71 72	System Alarm	XIANGSBSBSB	SG136TX(COM1-004)_001_002	Unconfirmed	2021-06-15 11:15:15	[Icons]

### Plant Search Bar

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

Detailed search: Move the cursor to  , click  that slides out, 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 or fault code, and select the types and processing status. Click “Search” to view the corresponding alarm list.

Click the plant name in the alarm list to jump to the single plant overview. Click the device name to bring up the device detail interface.

### Refresh Interval

The refresh interval is 5 min by default (the minimum refresh interval). Tick “Refresh Interval”, 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”.

- Deliver the fault recording task.

Click  to deliver the fault recording task.

### 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.

### Fault recording task

- To query a fault recording task, enter the task name, device name, device S/N, and fault name in the search box.
- Click “View” to view the fault recordings for the corresponding task.

### 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.

# Cleaning Plant

## Cleaning Plant

Click “Plant -> Cleaning plant”, to access the corresponding interface, on which cleaning robot information is displayed.

Plant Image	Current Status	Plant Name	Cleaning Capacity	Installed Power	Plant Address	Operation
	<span style="color: green;">●</span> 0 <span style="color: red;">●</span> 0 <span style="color: orange;">●</span> 0 <span style="color: grey;">●</span> 1	basetest2020025	0 Wp	10 Wp	安徽省合肥高新区习友路	
	<span style="color: green;">●</span> 0 <span style="color: red;">●</span> 0 <span style="color: orange;">●</span> 0 <span style="color: grey;">●</span> 1	LOGGER666666	1 Wp	0 Wp	安徽省合肥市蜀山区高新技术产业开发区习友路17...	
	<span style="color: green;">●</span> 0 <span style="color: red;">●</span> 0 <span style="color: orange;">●</span> 0 <span style="color: grey;">●</span> 1	S1911070001	50 Wp	0 Wp	安徽省合肥市蜀山区高新技术产业开发区阳光电源...	
	<span style="color: green;">●</span> 3 <span style="color: red;">●</span> 0 <span style="color: orange;">●</span> 0 <span style="color: grey;">●</span> 1	TEST1800415	50 Wp	0 Wp	安徽省合肥市蜀山区高新技术产业开发区阳光电源...	
	<span style="color: green;">●</span> 1 <span style="color: red;">●</span> 0 <span style="color: orange;">●</span> 0 <span style="color: grey;">●</span> 0	蜜衡测试机器人	1 Wp	100 kWp	anhui,hefei city	

Total 5 10/page < 1 > Go to 1

### Plant Search Bar

Enter plant name and device S/N, and click the icon  , to view corresponding plant list.

### Plant Information List

Display information such as plant picture, current status, plant name, cleaning capacity, and installed power.

### Cleaning Robot Information

Click plant name, to access the “Plant Detail” interface, on which cleaning robot information is displayed.

Plant Parameter	Description
Current Status	Display current status of the cleaning robot in the plant.
Fault	

Alarm	
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.

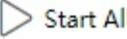


### Plant Search Bar

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.

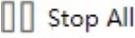
### Start All Cleaning Robots

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.

Chart

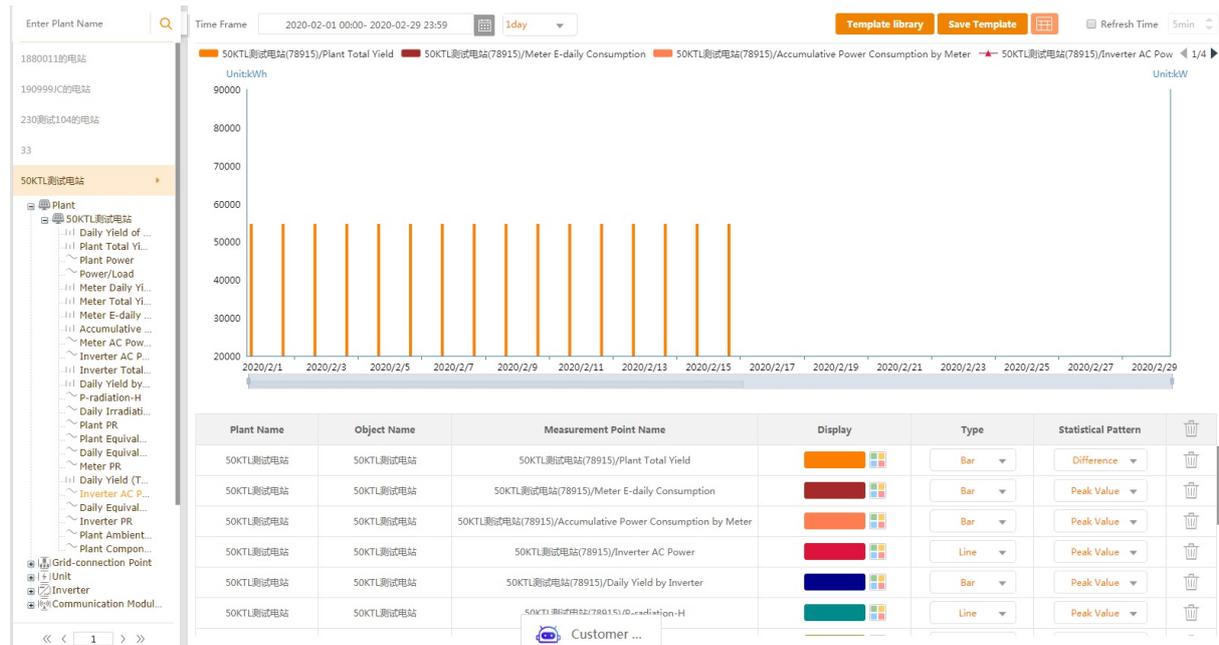
**Chart**

---

# 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 Interval

The refresh interval is 5 min by default (the minimum refresh interval). Tick “Refresh Interval”, 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 patten.
3. Optionally, click  in the upper right corner of the interface to display the parameters in the table form. Click , 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 “Report” on the menu bar 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.

### View Custom Report

1. Click “Report” on the menu bar to enter the corresponding interface.
2. Click “Custom Report” under the custom report module to enter the corresponding interface.
3. Perform the following operations according to the actual situation.
  - View Plant Report

Enter the plant name in the “Plant List” on the left and click  to view the plants that meet the query criteria. Or directly tick the corresponding plants and devices.

- View reports for other dates

Click , select the date of the query, and click “Comfirm”. Click “Search” to view statistics that match the date of the query.

- Switch Report Formats

Click “Switch Table” to switch the report statistics.

- Share and Export

Click “Share” to bring up the “Select” interface, tick the sharing target, and click “Comfirm” to share successfully.

Click  “Export” to bring up the “ Save as” dialog box. Set the report storage location and click “Save” to save the report information locally.

- Delete Report

Click “Delete” to delete the report data.

# 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 daily report as an example.

The procedure of viewing the plant report is different from viewing other reports, see "View F

### 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" to export 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.

### View plant report

1. Click “Report” in the menu bar to enter the “All” tab.
2. Click “Daily Report” in the plant report module to enter the corresponding interface. By default, the interface will display all the operation statistics of the plant, such as active power, today yield, etc.
3. According to the actual situation, perform the following operations.
  - Enter the plant name in the left plant list, and click the icon to search for the plant, or directly tick the plant in the list bar.
  - Click  , select the date, and click “Search” to view the plant report data for the corresponding date.
  - Click “Screening Column” to filter the data displayed in the report.
  - Click “Details” to enter to the Plant Compensative Report interface to view the plant compensation yield.
  - Click “Export” to export the plant report locally.

# Running Record

## Running Record

---

You can view the running record of the cleaning robot.

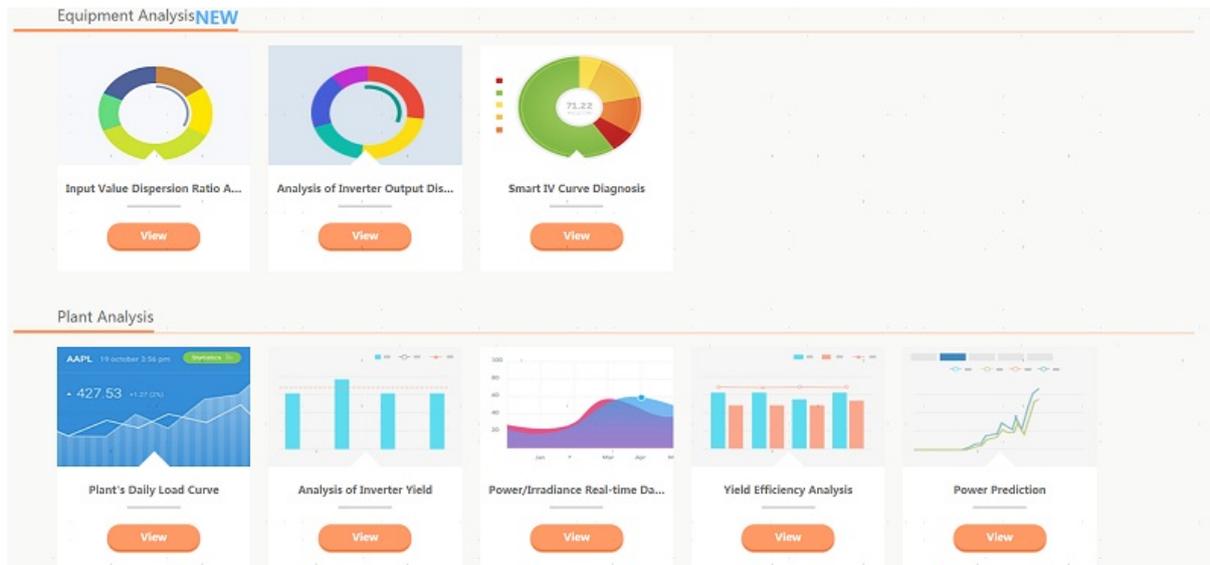
### Procedure

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.

# 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

---

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

---

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

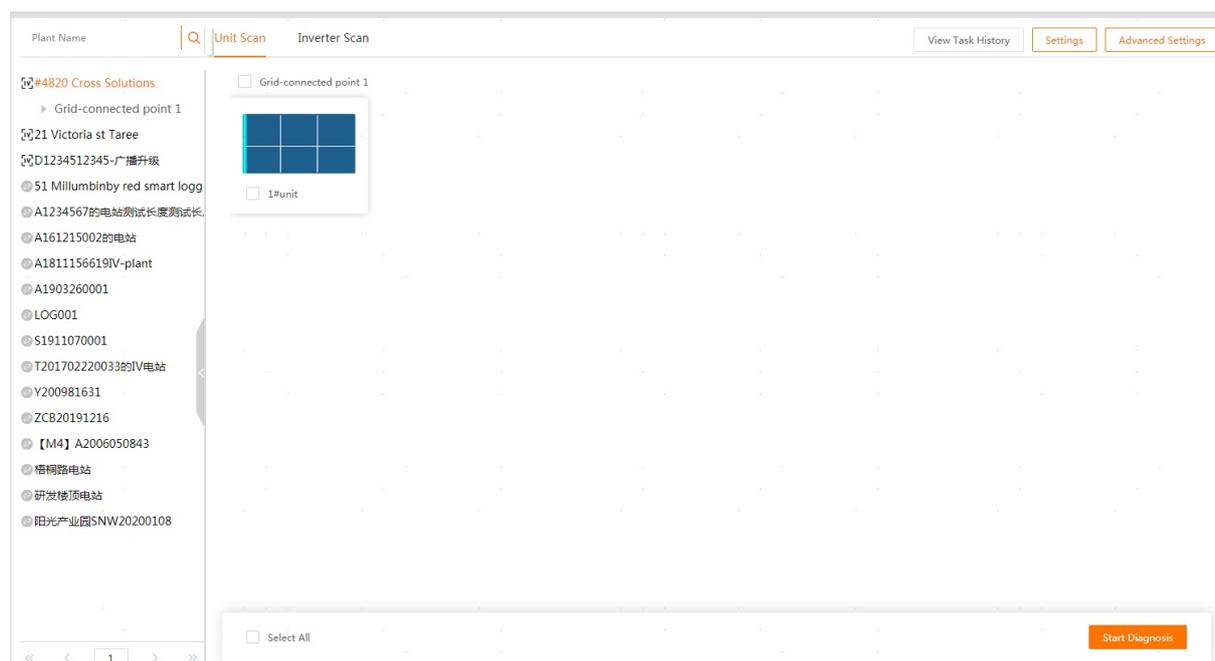
Click “Export”, select a desired storage location, and click “save” to save the discrete rate chart locally.

# 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 “Confirm and copy”. 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

---

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.

Management

**Management**

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# Firmware Update

## Firmware Update

---

# Interface Description

## Interface Description

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

The screenshot shows the 'Firmware Update' interface. At the top, there is a search bar labeled 'Enter Plant Name' and a search icon. Below it, there are filters for 'Inverter', 'Device Model', and 'Device S/N'. A 'Firmware Update' button is located in the top right corner. The main area contains a table with the following columns: Plant Name, Device S/N, Device Type, Device Model, Online Status, Current Version, Device Name, and Operation. The table lists several devices, including those with device names like 'SG6K-D\_1', 'SG5K-D\_1', 'INHT10K\_1', 'INHT5K\_1', 'SG12KTL-M\_99', 'INHT10K\_1', 'why666777', 'SG40KTL-M-8', 'SG40KTL-M-10', and 'SG40KTL-M-6'. The 'Operation' column contains icons for each device. At the bottom, there is a pagination bar showing 'Total 4353', '10/page', and page numbers 1 through 436.

### 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

---

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

---

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.

# 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.

The screenshot shows a web interface for managing work orders. At the top, there is a search bar with a magnifying glass icon and a 'Search' button. Below the search bar, there are filters for 'Time Range' (2018-08-22 00:00 to 2019-08-22 23:59), 'Work Order Number', and 'Fault Name'. The main area contains a table with columns: 'Station Name', 'Work Order', 'Work Order Status', 'Pending Task', 'Fault Name', 'Fault Device', 'Reporter', 'Report Time', and 'Action'. The table lists several work orders, with the third one highlighted in orange. On the left side, there is a sidebar with a search bar and a list of station names.

电站名称	工单	工单状态	待签任务	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	
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	
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	
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	
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	
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	
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	
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	

### Plant Search Bar

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

Detailed search: Move the cursor to , click that slides out, enter the plant name and device S/N. Tick “Installed Power”, “Plant Type” and “Company Name” and click “Comfirm” to view the corresponding plant list.

### Refresh Interval

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

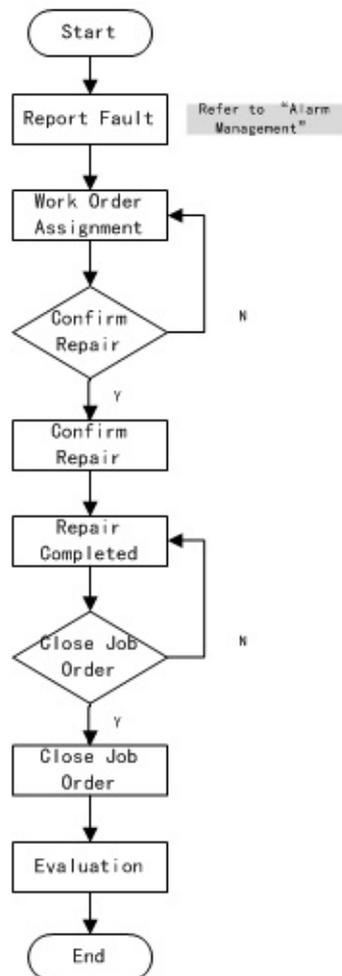
### Fault Search Bar

Set time segment and enter Work Order Number and Fault Classification. 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  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  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  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  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  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  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  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

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

1. Click “Shift Change” to enter the corresponding interface.
2. 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.
3. Click “Shift Change”, and the on duty status is changed to “Shift Change”.

### Take over Duty

1. Click “On duty” to enter the corresponding interface.
2. 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.

### 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 onduy 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 onduy 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.

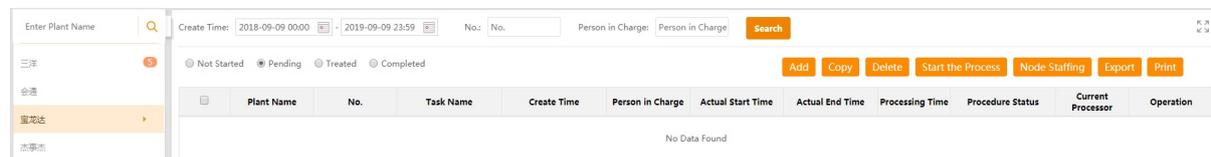
# Electrical Kind of Ticket

## 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.

NO.	Alarm Name	Alarm Target	Open Status	Operation
1	Plant Stop Operation	Plant	Shield	
2	DC Bus Box PV Array Current Steady Value	String	Shield	
3	Low Efficiency on String Inverter PV Array	String	Shield	
4	DC Bus Box PV Array Low Efficiency	String	Shield	
5	DC Converter Box N-way Branch Current Is Zero or Low	String	Shield	
6	The Group N-way Tributary Current Is Zero or Low	String	Shield	
7	Inverter Stops Running	Inverter	Shield	
8	Communication Interruption	General Information	Open	
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.
Low PR value	P-radiation-H>200W/m <sup>2</sup>	Plant PR < 65%
No plant yield	-	Starting Point of Derating Curve of Ambient Temperature=1

3.Reminder Settings. Set the reminder for low PR value and no plant yield. If this reminder is enabled, the system will send an email to the user when an alarm occurs. If this reminder is disabled, users will not be notified by email when an alarm occurs.

4. Apply the configuration to one or more plants.

- Apply it to one plant

Click “Confirm”.

- Apply it to several plants

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

#### **View Help File**

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

# Inverter Parameter Setting

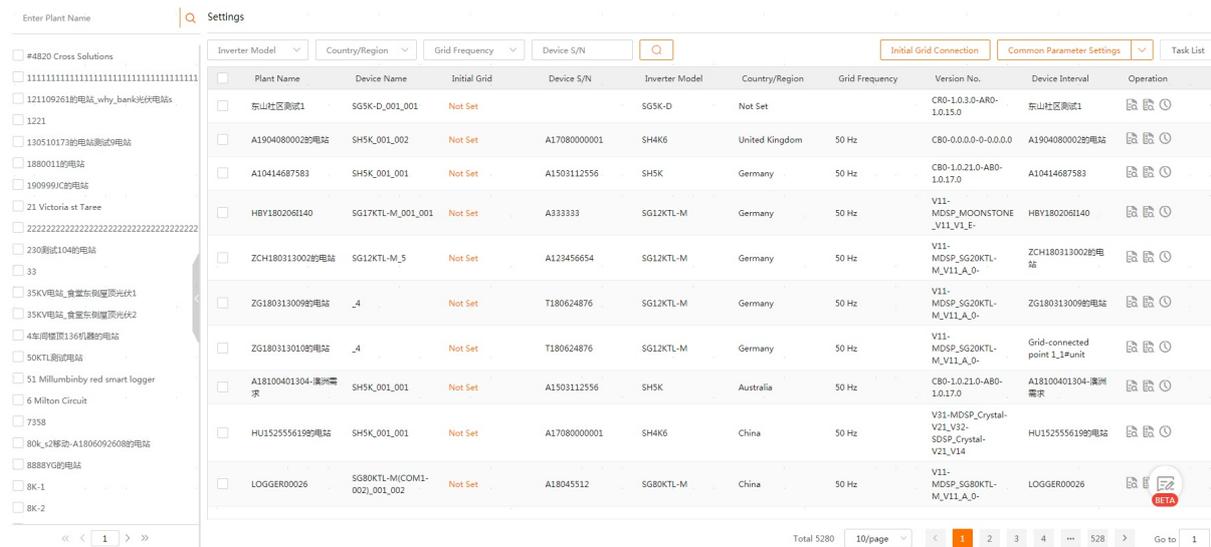
## **Inverter Parameter Setting**

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# Interface Description

## Interface Description

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.

### Device Search Bar

Users can search for desired devices by setting corresponding conditions.

### Operation Bar

The operation bar includes buttons such as Command line parameters setup , Initial Grid Connection, Common parameter settings , Advanced settings, and Task List.

### Device information 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.

If a device is currently being updated, the parameter setting interface will pop up, click “View Update Details” to view the device upgrade information.

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.

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

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

7. Click “Apply settings”.
8. Enter the login password on the pop-up window and enter the setting interface.

9. 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

---

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.

# Common Parameter Setting

## Common Parameter Setting

---

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.

### One-click Update

Enter the parameter setting page, click “Common Parameter Settings”.

- When there is a device to be updated, the interface will pop up to remind to update, the interface

shows the device type, device model and the corresponding update package of the device to be updated.

Click “One-Click Upgrade” to bring up the firmware update interface, displaying the task name.

Click “View Update Details” to bring up the task list and view the device upgrade information.

- If a device is currently being updated, the parameter setting interface will pop up, click “View upgrade details” to view the upgrade information of the device.

Live Data

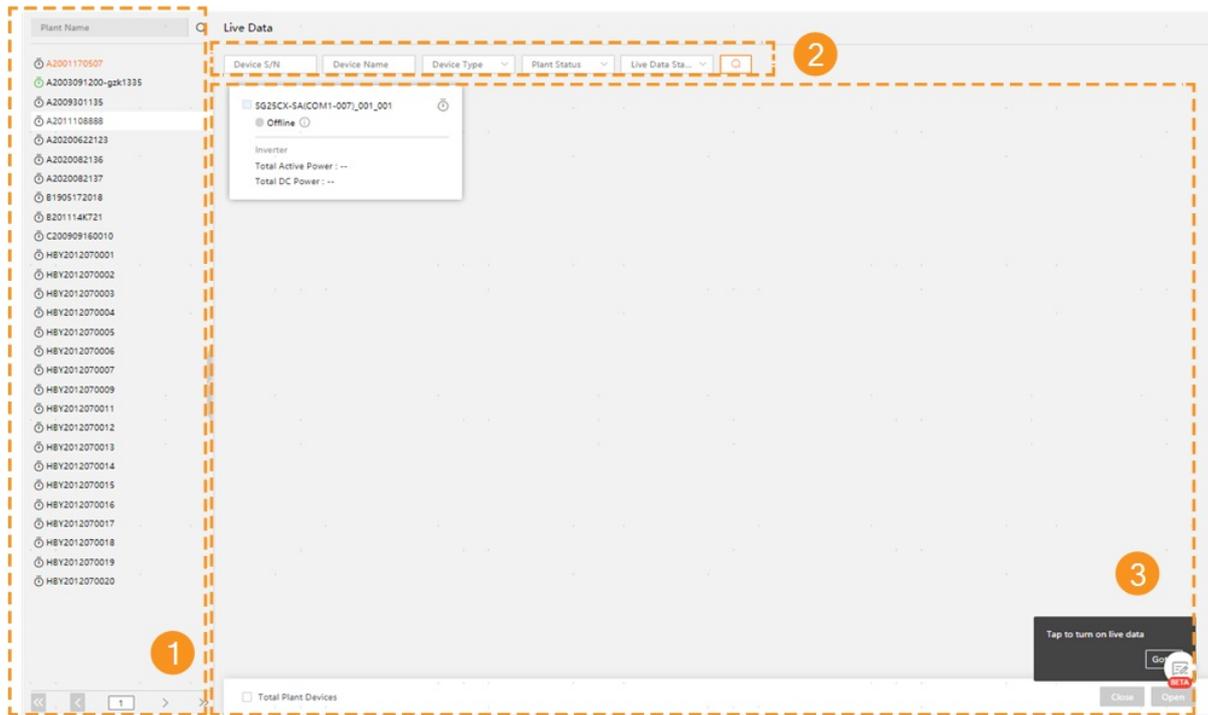
**Live Data**

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# Interface Introduction

## Interface Introduction

Click “Advanced->Second Data” on the menu bar to enter the live data interface.



1.Plant list 2.Device query bar 3.Operation bar

### Plant List

You can browse the information of the plant, device and measuring points of the current user.

### Device Query Bar

You can search for the device to be displayed by setting the conditions.

### Operation Bar

View the live data of the device.

# Live Data

## Live Data

---

The live data function allows a large amount of data to be collected from the device in a relatively short period of time, and this function can be enabled or disabled in necessary scenarios.

### Procedure

1. Tick the plant on the left side of the plant list bar, or enter the plant name and click  to search for the plant. The operation bar shows the devices under the plant.
2. Enter "Device S/N", "Device Name", tick "Device Type", "Plant Status", and "live data status" in the device query field, click , and the page displays the eligible devices.

# Viewing Live Data

## Viewing Live Data

---

Live data function allows collecting a large amount of device data in a short period of time. The data is automatically refreshed when the live data page is displayed.

1. Click "Main Measuring Point" to enter the device measuring point interface.
2. Click  on the right side of the measuring point data to bring up the measuring point curve graph.
3. Click  on the top right corner of the measuring point graph interface to refresh the measuring point curve.

Note:  means that the measuring point is a live level data measuring point that is not supported by the current device

# String Verification

## String Verification

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

Device Name	Subsystem	String	Verification Status	Enable or Not
HL1			To Be Rechecked	<input type="checkbox"/>
HL2			To Be Rechecked	<input type="checkbox"/>
HL3			To Be Rechecked	<input type="checkbox"/>
HL4			To Be Rechecked	<input type="checkbox"/>

### 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.

Asset

**Asset**

---

# Device Information

## Device Information

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



The screenshot shows a web interface for device management. At the top, there are input fields for 'Enter Plant Name', 'Device Name', and 'Device Address', along with 'Search' and 'Reset' buttons. Below this is a table with columns: Device Name, Device Address, Device Model, Manufacturer, Commissioning Date, Current Status, and Operation. A sidebar on the left lists device categories like Inverter, Combiner Box, Meter, etc.

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.
- Click plant name to view corresponding device information. You can view the general information, device alarm information, power curve, etc.

### Viewing General Information

The basic device information includes measuring point data such as the general information, MPPT information, load information, battery information, and grid information, as well as device information such as device status, model, S/N, manufacturer, etc.

1. Click device name, and you will enter “General Information” interface by default.

2. Click  or  behind the parameters to select time segment and time interval, and click . In this way, you can view history information.

3. Perform the following operations according to actual conditions.

- Click the icon  to refresh the interface information.
- Click the icon  to change the curve into report.
- Click “Save table data” to export the parameter information to the local.

### Viewing Active Fault

View the list of alarms not closed.

1. Click device name, and you will enter “General Information” interface by default.

2. Click "Active Fault" to enter the corresponding interface.
3. Enter time segment and fault classification, and select "Alarm processing state".
4. Click  to view the corresponding faults.

### Viewing Fault History

View the list of history alarms closed.

1. Click device name, and you will enter "General Information" interface by default.
2. Click "Fault History" to enter the corresponding interface.
3. Enter time segment and fault classification.
4. Click  to view the corresponding faults.

### Viewing chart

View power generation information displayed in the chart.

1. Click device name, and you will enter "General Information" interface by default.
2. Click "Chart" to enter the corresponding interface.
3. Select time segment and click the icon  to select the time interval. The power generation statistical period can be set to 10 seconds, 5 minutes, 15 minutes, 30 minutes, or 60 minutes.
4. Click  to view the corresponding curve.
5. Perform the following operations according to actual conditions.

- Click the icon  to refresh the interface information.
- Click the icon  to change the curve into report.
- Click "Save table data" to export the parameter information to the local.

### Viewing Remote Signaling Status

1. Click device name, and you will enter "General Information" interface by default.
2. Click "Remote Signaling Status" to enter the corresponding interface.
3. View remote signaling status.
4. Click  to refresh the interface information.

5. Click  , select the time , and click  , to view parameter history.

6. Click  to export the table.

Only Logger1000 and Logger3000 have remote signaling status.

### 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			Search	Batch Deleted	Add			
222	01-01-146	Transformer	Distribution Transformer	仓库	G	2222	22	222	Not Used	 
11	05-01-145	Isolation Switch	High Voltage Isolation Switch	仓库	G	1111111111	11	111	Used	 
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	Language	Knowledge Base Name and Keyword	Knowledge Base Name and Keyword	Search	Add	Batch Deleted			
<input type="checkbox"/>	Knowledge Base Name	Knowledge Base Type	Device Type	Key Words	Cited Times	Add Time	Add Person	Status	Operation
<input type="checkbox"/>	System alarm	Fault Maintenance Records	Inverter	System alarm	0	2019-07-01 10:16:47	admin	Audit Passed	  
<input type="checkbox"/>	System fault	Fault Maintenance Records	Inverter	System fault	0	2019-07-01 10:16:47	admin	Audit Passed	  
<input type="checkbox"/>	Battery fault	Fault Maintenance Records	Inverter	Battery fault	0	2019-07-01 10:16:47	admin	Audit Passed	  

### 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

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