



# EMS1000

## **User Manual**

Version 3.0



www.solaxpower.com

## STATEMENT

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### Scope of Validity

This manual is an integral part of EMS1000 (hereinafter referred to as "EMS1000" or "the Device"). It introduces the installation, electrical connection and webpage operations of the Device. Please read it carefully before operating.

### **Target Group**

This manual is intended for EMS1000 installers, operators and maintenance personnel. Among the manual, the installation and electric connection procedures can only be performed by qualified personnel who:

- Are licensed and/or satisfy state and local regulations.
- Have good knowledge of this manual and other related documents.

#### Conventions

The symbols that may be found in this manual are defined as follows.

Symbol	Description
ANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE!	Provides tips for the optimal operation of the product.

### **Frequently Used Functions**

Icons and parameters that may be found on the webpage of EMS1000 and this manual are defined as follows:

Parameter/Icon	Description	
*	The parameter must be configured.	
×	Cancel selection or close the current page	
0	Display the content that you entered	
Ø	Hide the content that you entered	
?	View the description for the function or parameter	

#### **Change History**

Version 3.0 (2025-02-25)

Modified "5.1 Device Terminals" (Revised the terminal definition of NET 1 to 4)

Modified "3.1 Installation Requirements" (Updated the image of industrial and commercial plants)

#### Version 2.0 (2025-01-21)

Modified "5.1 Device Terminals" (Revised the terminal definition of NET and RS485 terminals)

Modified "6.1 Logging in" (Revised ther method of logging, specifically the cable connection method)

Modified "6.4 Overview" (Changed the basic information layout)

Modified "6.5.1 Adding Devices", and added "6.5.5 Deleting Devices" (Changed the string of adding devices, and added the section of Deleteing Devices)

Modified "6.6.1 EMS1000" and "6.6.8 Supervision System" (Added NET IP status on EMS1000 information page, added descripiton for Setting Access Control Protection, and added Viewing HIstory Data)

Modified "6.7.2.1 Work Mode", "6.7.2.5 External Control" and "6.7.2.5 External Control", and added "6.7.3 Smart Scene" (TRENE system added peak shaving mode, and manual mode operations changed)

#### Version 1.0 (2024-09-02)

Modified "3.2 Scope of Delivery" and "5.7 Antenna Connection" (Changed the image of the antenna)

Modified "6 Webpage Operations" (Modified the content based on the modification on the product webpage, such as the strings, screenshots and new functions)

Changed the email address of Australia

Version 0.0 (2024-07-15)

Initial release

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## 1.1 General Safety

EMS1000 has been meticulously designed and thoroughly tested to comply with the relevant state and international safety standards. Nevertheless, like all electrical and electronic equipment, safety precautions must be observed and followed during the installation and electrical connection of the Device to minimize the risk of personal injury.

Please thoroughly read, comprehend, and strictly adhere to the comprehensive instructions provided in the user manual and any other relevant regulations prior to the installation of the Device. The safety instructions in this document serve as supplementary guidelines to local laws and regulations.

SolaX shall not be liable for any consequences resulting from the violation of the storage, transportation, installation, and operation regulations outlined in this document. Such consequences include, but are not limited to:

- Device damage due to force majeure, such as earthquake, flooding, thunderstorm, lighting, fire hazard, volcanic eruption and overvoltage
- Device damage due to human causes
- Failure to follow the operation instructions and safety precautions on the product and in this document
- Installation and use under improper environment or electrical condition
- Unauthorized modifications to the product or software
- Use of incompatible devices

## 1.2 Explanation of Symbols

Table 1-1 Symbols on Device labels

Symbol	Description
CE	CE mark of conformity
	RCM mark of conformity
	Do not dispose of the device together with household waste.

#### EU DECLARATION OF CONFORMITY WIFI EIRP: 802.11b/g/n: 18 dBm • This equipment complies with CE radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. Hereby, SolaX Power Network Technology (Zhejiang) Co., Ltd. declares that EMS1000 supports 2.4G WIFI, 2G, 3G and 4G functions. It is in conformity with the relevant union harmonization legislation: Radio Equipment Directive: 2014/53/EU. • The full text of the EU declaration of conformity is available at the following internet address: www.solaxpower.com. • Band specification: » GSM/GPRS/EGPRS900: 35 dBm GSM/GPRS/EGPRS1800: 32 dBm » WCDMA Band I: 25 dBm » WCDMA Band VIII: 25 dBm » LTE Band 1: 25 dBm >> LTE Band 3: 25 dBm » LTE Band 7: 25 dBm >> LTE Band 8: 25 dBm » LTE Band 20: 25 dBm » ITE Band 28: 25 dBm »

- » LTE Band 38: 25 dBm
- » LTE Band 40: 25 dBm

## 2.1 Introduction

EMS1000 is an all-in-one device for photovoltaic energy management. It integrates multiple functions involving the energy system, such as data acquisition, transmission and storage, and real-time interaction with SolaXCloud. With EMS1000, you can conveniently configure system settings and monitor system operation from anywhere, at any time.

## 2.2 Features

#### • All-in-one design and flexible installation

EMS1000 is small in size, and supports multiple installation methods that are suitable for different scenarios. For use with cabinet, one EMS1000 can manage up to 10 cabinets.

#### • Inclusive functions and easy operation

The webpage displays both overall and detailed system information, such as realtime and historical system data, system alarms, and supports configuring the energy management strategy and other settings through several clicks.

#### Large capacity and quick response

EMS1000 includes a 128 GB SSD that can store data for up to 1 year, and responds to system requests in seconds.

## 2.3 Appearance

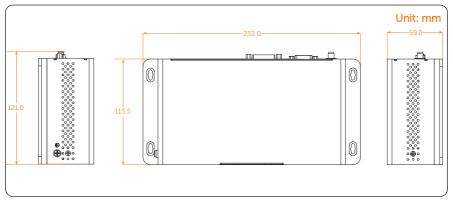


Figure 2-1 Device dimensions

## 2.4 Definition of Indicators

Check for the indicator status against the table for the operation status of the Device.

Table 2-2 Indicator status description

Indicator	Status	Description
	Stead on	Normal power supply
Power (PWR)	Off	No power supply
	•••• Blinking	The system runs normally.
Running (RUN)	Stead on Off	The system crashes.
	Stead on	System error occurs.
ERR (Error)	Off	The system runs normally.
	Stead on	Normal SSD
SSD	•••• Blinking	Transmitting data
	Off	Lack of SSD or abnormal SSD

## 3 Installation Preparation

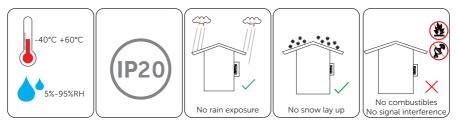
## 3.1 Installation Requirements

Before installing the device, select a proper installation site and prepare the tools based on the following instructions.

#### **Environment Requirements**

Make sure the installation environment meets the following conditions:

- The ambient temperature: -40°C to +60°C.
- The relative humidity shall be between 5-95%RH.
- Avoid rain exposure and snow accumulation.
- Do not install the Device in areas with flammable and explosive materials.
- Avoid signal interference.



#### Installation Carrier Requirements

The installation carrier must be made of a non-flammable material, and the Device must be protected against water with a waterproof box or other waterproof measures.

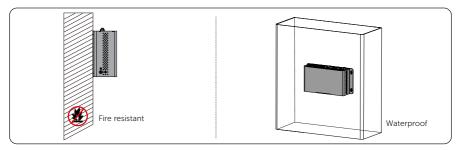


Figure 3-2 Installation carrier requirement

#### **Clearance Requirements**

To guarantee proper heat dissipation and ease of disassembly, the minimum space around EMS1000 must meet the standards below.

For installations with multiple Devices, make sure to leave a minimum space of 300 mm between each Device.

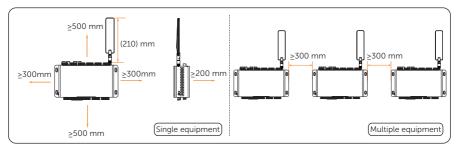


Figure 3-3 Clearance requirements



Multiple models of antenna are available, and the antenna dimensions vary with the model.

## 3.2 Scope of Delivery

Before acceptance, check whether the Device and all accessories listed below are included in the package and are in good condition. If there is anything missing or damaged, please return it to us.

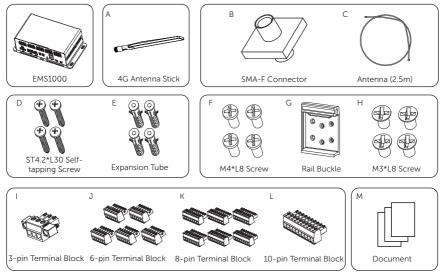


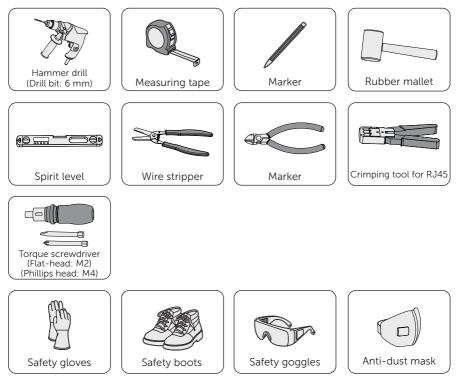
Table 3-1 Scope of delivery

Item	Description	Quantity	Remarks
/	EMS1000	1	
A	4G Antenna Stick	1	
В	SMA-F Connector	1	For connecting the antenna
С	Antenna (2.5m)	1	
D	ST4.2*L30 Self-tapping Screw	4	—For device wall mounting
E	Expansion Tube	4	For device wait mounting
F	M4*L8 Screw	4	Reserved
G	Rail Buckle	1	- For dovice rail mounting
Н	M3*L8 Screw	4	—For device rail mounting
	3-pin Terminal Block	1	For power connection
J	6-pin Terminal Block	5	For RS485 connection
К	8-pin Terminal Block	6	Reserved
L	10-pin Terminal Block	1	Reserved
М	Document	/	

\*Note: Accessories in the same box are packed together in one bag.

## 3.3 Tool Requirements

Installation tools include but are not limited to the followings. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.



## 4 Installation Procedure

EMS1000 supports 3 installation modes: cabinet installation, DIN-rail installation and wall mounting. Select an installation mode according to the on-site conditions.

## \Lambda warning!

Only qualified personnel are allowed to perform the mechanical installation in accordance with local laws and regulations.

## 4.1 Cabinet Installation

EMS1000 can work with multiple cabinet models for energy system management, and is already properly installed and connected before the cabinet is delivered. For specific information, see the user manual of the cabinet.

## 4.2 Din-rail Installation

**Step 1:** Align the four holes of the DIN rail buckle (Part G) to the installation holes at the rear of EMS1000, and then use four M3\*L8 screws (Part H) to secure them.

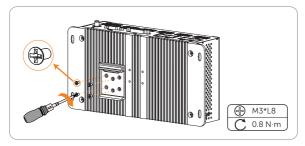
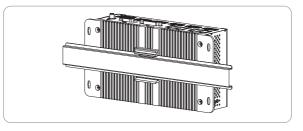


Figure 4-1 Attaching the rail buckle



**Step 2:** Clasp the combined rail buckle from top to bottom onto the rail.

Figure 4-2 Clasping the DIN rail buckle to rail

### 4.3 Wall-mounting Installation

#### NOTICE!

For this installation method, ensure that there are enough waterproof measures for the Device.

**Step 1:** Place EMS1000 onto the wall at a proper height from the ground, use a spirit level to ensure that the Device is horizontal and level, and then mark holes.

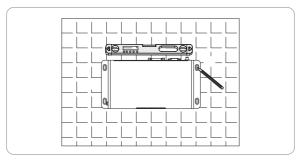
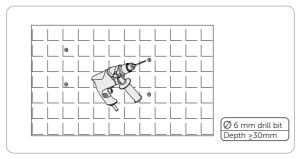
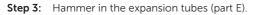


Figure 4-3 Determining the installation position



**Step 2:** Drill holes into the wall according to the hole marks.

Figure 4-4 Drilling holes



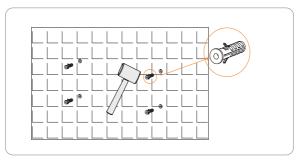


Figure 4-5 Hammering in expansion tubes

Step 4: Use four ST4.2\*L30 (part D) self-tapping screws to secure the Device to the wall.

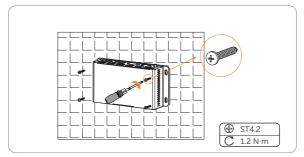


Figure 4-6 Securing the Device

## 5.1 Device Terminals

EMS1000 features abundant terminals that can be used to connect different device. You can also develop customized functions for idle terminals.

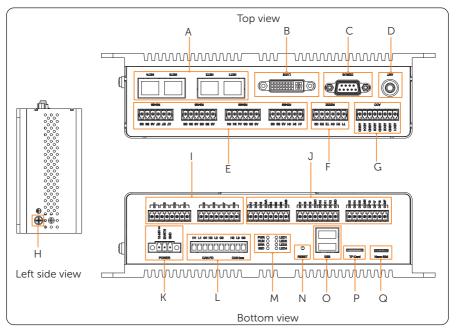


Figure 5-1 EMS1000 appearance

Table 5-1	Description	of appearance
-----------	-------------	---------------

Position	Area	ltem	QTY	Description
Тор	A	Ethernet terminal (NET)	4	<ul> <li>NET1: Connected to the switch in the cabinet</li> <li>NET2: Connected to EMS1000 PRO</li> <li>NET3: Reserved</li> <li>NET4: Connected to the router for network</li> </ul>
	В	LVDS terminal	1	Reserved
	С	Debug terminal (DEBUG)	1	Reserved

Position	Area	Item	QTY	Description
	D	Antenna socket (ANT)	1	For expanding signal transmission
Тор	E	RS485 terminal	8	<ul> <li>1-6: Connected to MODBUS RTU devices, such as cabinet meter, and grid-connected inverters</li> <li>7: Only connected to the inverter in AELIO system</li> <li>8: Only connected to the gird meter</li> </ul>
	F	RS232 terminal	2	Reserved
	G	ADC terminal	4	Reserved
Left side	Н	Earthing terminal	1	For device earthing
Bottom	I	DO terminal	8	Reserved
	J	DI terminal	18	DIA1-DIA3 and COMA, DIB4 and COMB: Dry contact DIB5-COMF: Reserved
	К	Power supply (POWER)	1	12 Vdc-24 Vdc
	L	CAN terminal	3	$2 \times \text{CAN-FD}$ , and $1 \times \text{CAN-bus}$
	М	Indicators	8	<ul> <li>Power status (PWR)</li> <li>Running status (RUN)</li> <li>Error (ERR)</li> <li>SSD status (SSD)</li> <li>LED 1-LED4: Reserved</li> </ul>
	N	Reset button (RESET)	1	For device resetting
	0	USB socket (USB)	2	For device update
	Р	TF card socket (TF Card)	1	For firmware programming
	Q	Nano-SIM card socket (Nano- SIM)	1	For 4G communication

## 5.2 Cable Requirements

Cables are not in the scope of delivery of EMS1000. Please prepare the cables and materials in advance as required below.

No.	Item	Туре	Specification
1	Power adapter	/	24 VDC, 2 A
2	RS485 cable	Three-core or multi- core cables	Cross-sectional area: 0.2 mm <sup>2</sup> – 2.5mm <sup>2</sup> (24AWG ~14 AWG)
3	DI cable	Dual-core or multi-core cables	Cross-sectional area: 0.2 mm <sup>2</sup> – 1.5mm <sup>2</sup> (24AWG ~16 AWG)
4	Network cable	CAT 5E	/
5	RJ45 terminal	Standard RJ45 terminal	/

Table 5-2	Cable	specification
-----------	-------	---------------

## 5.3 Network Cable Connection

- **Step 1:** Strip the insulation layer of the network cable to an appropriate length.
- **Step 2:** Attach the RJ45 connector to the stripped cable, and then use a crimping tool to crimp them.

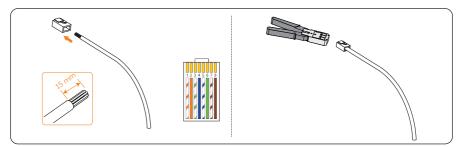
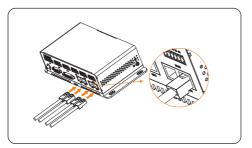


Figure 5-2 Strpping and crimping network cable

Table 5-3	Pin	number	and	color
-----------	-----	--------	-----	-------

PIN No.	Color	PIN No.	Color
1	Orange-White	5	Blue-White
2	Orange	6	Green
3	Green-White	7	Brown-White
4	Blue	8	Brown



**Step 3:** Insert the assembled network cable into the corresponding slot.

Figure 5-3 Connecting the cable

## 5.4 4G SIM Card Installation

4G SIM card is not in the scope of delivery. Please prepare a 4G SIM card in advance.

Keep the chip downside, and then insert the SIM card into the Nano-SIM slot.

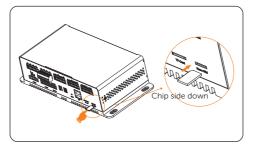


Figure 5-4 Inserting the 4G SIM card

## 5.5 RS485 Cable Connection

NOTICE

• Please perform proper insulating measures for wires that are not connected.

**Step 1:** Strip the insulation layer of the cable and wires to an appropriate length.

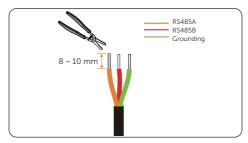


Figure 5-5 Striping the cable

**Step 2:** Insert the RS485A, RS485B and grounding wire into the 6-pin terminal block in order, and then use a wrench to secure them.

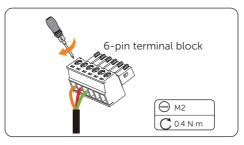


Figure 5-6 Securing wires



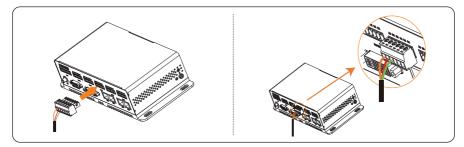


Table 5-4 Inserting the terminal block

Port	Marking	Description
RS485 1-8	А	RS485A
	В	RS485B
	G	Ground wire

#### Table 5-5 RS485 port description

## 5.6 DI Port Connection

**Step 1:** Strip the insulation layer of the cable and wires to an appropriate length.

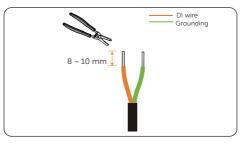


Figure 5-7 Striping the cable

**Step 2:** Insert the DI and grounding wire into the 8-pin terminal block in order, and then use a wrench to secure them.

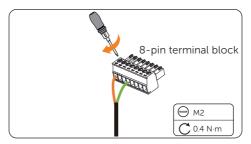
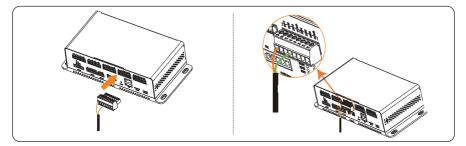


Figure 5-8 Securing wires



**Step 3:** Insert the terminal block into the DI slot in order based on the device markings.

Table 5-7 Inserting the terminal block

#### Table 5-8 DI port description

Port	Marking	Description	Remark
DI	<ul> <li>DIA1-DIA3</li> <li>DIB4-DIB6</li> <li>DIC7-DIC9</li> <li>DID10-DID12</li> <li>DIE13-DIE15</li> <li>DIF16-DIF18</li> </ul>	Connected to the DI cable	While connecting the DI cables, make sure that the
וט	<ul> <li>COMA</li> <li>COMB</li> <li>COMC</li> <li>COMD</li> <li>COME</li> <li>COMF</li> </ul>	Connected to the grounding cable	-grounding cable is connected to the corresponding COM terminal.

## 5.7 Antenna Connection

The antenna stick can be directly inserted into the antenna slot, or connected through the SMA-F connector. The latter is only applicable to cabinet installation.

#### **Quick Insertion**

Insert the antenna stick into the antenna slot, and then swirl it clockwise to fix it.

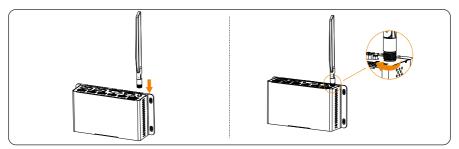


Figure 5-9 Fixing the antenna stick

#### **Connection through SMA-F Connector**

**Step 1:** Connect one end of the antenna to the SMA-F connector, and then fix the other end of the antenna to EMS1000.

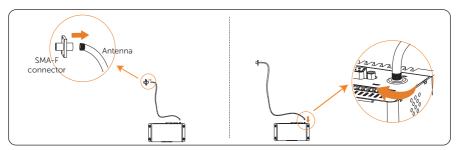


Figure 5-10 Connecting the antenna

**Step 2:** Swirl the antenna stick clockwise to fix it to the SMA-F connector.

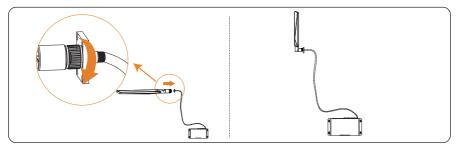


Figure 5-11 Fixing the antenna stick

## 6 Webpage Operations

View the system information, and manage the power system through EMS1000 webpage.

#### NOTICE!

Screenshots of V003 software are used for example in this chapter, and the actual page details might vary.

## 6.1 Logging in

#### NOTICE!

IE browser is not supported currently, and we recommend logging in to the webpage through Chrome.

- **Step 1:** Connect the computer to the switch in the energy storage cabinet with a network cable, or connect the computer to EMS1000 hotspot named WiFi\_SN, and then go to the defined IP address based on the connection mode.
  - » For wired connection: 192.168.11.10
  - » For hotspot connection: 192.168.10.10
- **Step 2:** On the login page, select the language, enter the username and password, and then click **Login**.

The default username and password for the user account are user and 123456.



Figure 6-12 Login page

## 6.2 Webpage Layout

EMS1000 webpage offers a wide range of functions that are logically divided into multiple modules, such as overview, device list, system management, alarm information and more.

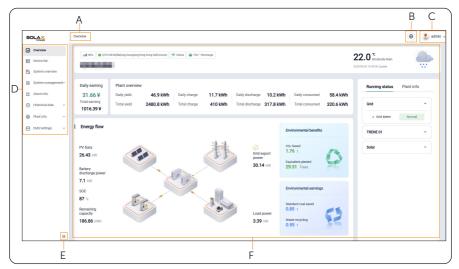


Figure 6-1 Page layout

Table 6-1 F	Page description
-------------	------------------

No.	Item	Description
A	Page path	Path of the current page. You can click the main or sub menu in the path to directly go to the defined menu.
В	$\oplus$	Click the icon to switch the system language without logging out
С	🧶 user 🗸	The current login account, either user or admin. You can click the icon to change password (available only for user account) or log out.
D	Navigation bar	Function items that the Device offers
E	Hiding icon	Click the icon to hide the navigation bar
F	Content area	Detailed information of the selected function item

## 6.3 Changing Password

We recommend changing the password immediately after logging in to the webpage for the first time.

- Step 1: Click User on the upper-right corner, and then select Change Password.
- Step 2: On the Change Your Password pop-up, enter the original password, enter and confirm the new password, and then click Ok.

The password should be at least 6-32 characters long, including numbers, uppercase and lowercase letters, and symbols.

Change password	×
*Old password:	
Please enter	R
* New password:	
Please enter	R
* Confirm new password:	
Please enter &	<b>R</b>
Cancel	firm

Figure 6-2 Changing password



### 6.4 **Overview**

In this menu, you can have an overview of the entire system, including the system information, daily and total revenue and energy details, real-time energy data and power line chart.

Log in to the webpage, and the **Overview** page is displayed by default.

#### **Basic System Information**

View the time zone and local weather of the plant, and system information including 4G signal strength, connection status of EMS1000 and SolaXCloud platform and system operation mode.



Figure 6-3 Basic station information

#### Table 6-2 Information description

No.	Description
A	Work mode of the system
В	Ripple control or DRM control mode that the system is currently in if the function is enable
С	Connection status of EMS1000 and the SolaXCloud platform
D	4G signal strength. The icon is displayed only when a 4G SIM card is installed.
E	Name of the plant
F	Time zone of the plant
G	Weather condition of the plant and data refreshing time

#### **Energy Statistics**

View the revenue brought by and the key energy data of the system.

Daily earning	Plant overvie	w						
2499.6¥	Daily yield	53.9 kWh	Daily charge	11.8 kWh	Daily discharge	14.9 kWh	Daily consumed	59 kWh
Total earning 3484.33 ¥	Total yield	2487.8 kWh	Total charge	410.1 kWh	Total discharge	322.5 kWh	Total consumed	321.2 kWh

Figure 6-4 Energy data

Table 6-3 Energy data parame	eter description
------------------------------	------------------

Parameter	Description
Daily Earning	Revenue that the system has generated on the day
Total earning	Total revenue that the system has generated. It is the sum of revenue that all devices generate since they are connected to EMS1000.
Daily yield	Amount of energy that PV panels have generated on the day
Total yield	Total amount of energy that PV panels have generated

Parameter	Description
Daily charge	Amount of energy that has been charged into the battery on the day
Total charge	Total amount of energy that has been charged into the battery cluster
Daily discharge	Amount of energy that the battery has discharged on the day
Total discharge	Total amount of energy that the battery has discharged
Daily consumed	Amount of energy that the load in the system has consumed on the day
Total consumed	Total amount of energy that the load in the system has consumed

#### **Energy Flow**

View the energy flow among the four major components of the system, and the specific real-time energy data of each component.

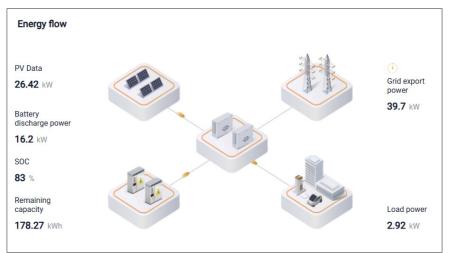


Figure 6-5 Energy flow

Component	Parameter	Description			
PV PV Data		Amount of power that the PV panels generate in real time			
	<ul><li>Battery charge power</li><li>Battery discharge power</li></ul>	Amount of power that is charged into or discharges from the battery in real time			
Battery	SOC	Battery SOC, in %			
	Remaining capacity	Available energy of the battery			
Grid • Grid export power • Grid import power		Displays the supplied power or feed-in power of the grid side in the system			
Load Load power		Amount of power that the load is consuming in real time			

#### Table 6-4 Energy flow parameter description

#### **Environmental Contribution**

The environmental profits of the system is also displayed based on the amount of solar energy that has been utilized.



Figure 6-6 Environmental value and profit

Parameter	Description
CO <sub>2</sub> saved	Amount of $CO_2$ that will be generated if the energy is produced by fuels
Equivalent planted	Number of trees that will be used to absorb the reduced amount of $\text{CO}_2$ emitted

Table 6-5 Environmental value parameter description

Parameter	Description
Standard coal saved	Amount of coals that will be used to generate the energy
Waste recycling	Amount of waste that will be reused to generate the energy

#### **Running Status and Plant Information**

#### Running Status

Quickly view the running status of the grid-connected meter and devices in each cabinet that EMS1000 manages. This helps you to grasp the overall operation of the entire system the moment you log in to the webpage.

#### • Plant Information

Plant information includes the address, composition, scale and time of establishment of the plant.

Inning status	Plant info	
Grid		^
Grid Meter	Normal	
TRENE 01		^
Meter 01	Normal	
<ul> <li>Inverter 01</li> </ul>	Normal	
<ul> <li>Battery 01</li> </ul>	Normal	ī.
Air conditioning	Alarm	
Supervision system	Normal	
Solar		^
488	Normal	1

Figure 6-7 Station information and running status

Table 6-6 Station information parameter description

Parameter	Description
ESS power	Maximum charging and discharging power of the battery
PV capacity	Maximum power output of the PV

#### **Running Line Chart**

View the running data of the grid power, battery power, PV power, load power and Battery SOC in line chart so that you can understand the changes in the energy of each component more easily and conveniently.

You can also hover the mouse on the line chart to view the data on a specific moment.

tunning line chart	Grid powe	r Battery power	PV power	Load power	Battery SOC			
Srid power (kW)								
- 10 - 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2								
-40 -50								
-60								
0644005 (86425) 064645 (865005 (855025 (855645 100005 100125 100645 101152 101712 102012 102152 1021712 103032 103152 103712 104032 104152 104712 105032 105152 105756 110116								

Figure 6-8 Running line

## 6.5 Device List

Devices that are connected to EMS1000 are displayed here in hierarchy. The gridconnected meter and cabinets are displayed on the first tier, and the sub devices of these cabinets are displayed on the second tier under each cabinet.

#### 6.5.1 Adding Devices

Currently, EMS1000 only supports adding inverters manually on the webpage. You can add inverters through Modbus RTU or Modbus TCP.

The procedure and communication protocol of TRENE and AELIO systems are different. Inverter in the TRENE system can be indentified automatically once it is connected to EMS1000, while inverter in the AELIO system needs to be added manually.

#### NOTICE!

Adding device is only available for Admin account.

#### Step 1: Select Device list > + Device addtion.

Step 2: On Add device pop-up, select the device type and COM method, enter the required parameters, and then click Confirm.

	Device list > Device	list					🕀 🕴 adr
Overview Device list	Online status:		Device type: Please choose			۵۶	earch Reset
System overview System management~	Device list					2 + Device	addition (3) Device pairing
Alarm info	No.	Device name	Device type	SN	Device model	Online status	Operation
Historical data v	1	Grid Meter	Device addition	×	DTSU666-CT	🗢 Online	Delete
Plant info ~	2	- III AELIO 01	Device type:     Please choose	Ű	AELIO-P60B100		
EMS Settings ~	3	inverter 01	* COM method:		X3-AELIO-60K	🗇 Online	
	4	m Battery 01	Please choose	•	TB-HR140	🗢 Online	
	5	Meter 01			DTSU666 CT	🌩 Online	
	0	I0 Module 01		Cancel Confirm	1	🗢 Online	
							10/Page v Coto

Figure 6-9 Adding devices

• Adding inverter to TRENE system through Modbus TCP

Generally, inverters that support Modbus TCP can be automatically added to EMS1000 once they are connected to it. However, for inverters that do not support DHCP, you will have to manually enter the IP address.

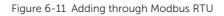
Only one inverter can be added through this communication method each time.

A	dd device		×
	* Device type:		
	Inverter	``	·
	* COM method:		
	MODBUS TCP	>	<
	*IP Address:		
	Please enter		
		Cancel	Ok

Figure 6-10 Adding through Modbus TCP

* Device type:	
Inverter	~
* COM method:	
MODBUS RTU	~
* COM Port:	
Please choose	~
* Connected device qty:	
Please choose	~
* Address allocation:	
Please choose	~
* Start addr:	
Please enter	

• Adding inverter to AELIO system through Modbus RTU





Parameter	Value Range	Description
COM port	1-8	Number of RS485 terminal of EMS1000 that the inverter is connected to. For example, if the inverter is connected to the 8th RS485 terminal of the Device, the Serial Num is 8.
Connected device qty	1-20	Number of inverters that EMS1000 will be connected to. Up to 20 inverters can be connected.
Address allocation	• Manual • Auto	<ul> <li>Auto: Select this method when the inverter supports Modbus RTU automatic address allocation. EMS1000 will automatcially asssign and recognize an RTU address for your inverter.</li> <li>Manual: Select this method when the inverter does not support Modbus RTU automatic address allocation. In this case, you will need to manually modify the Modbus address.</li> </ul>
Start addr	/	The minimal Modbus address For manual address allocation, enter the minimal address that is configured for the inverter; For auto address allocation, enter 1

# 6.5.2 Pairing Devices

Device pairing is to bind the cabinet and its sub devices based on the SN. Such sub devices include inverter, battery and IO module. When one or more cabinets are connected to EMS1000, the device pairing function can automatically sort out the sub devices and display these devices under the corresponding cabinet in **Device list**.

This is ideal for use after you add, delete or modify the sub devices in the cabinet so that the Device list is updated in time.

#### NOTICE!

Pairing device is only available for Admin account.

Log in to the webpage, and then select **Device list > Device pairing**.

The pairing results will be displayed in Paired device and Unpaired device.

SOLAX	De	vice list > Device list							🕒 😢 admin
Overview     Device list		Online status:	lease choose	*	Device type: Please choose	*		Q, Search	Reset
System overview System management~	i	Device list						+ Add device	2 O) Device pairing
<u> 在</u> Alarm info		No.	Device name		Device type	SN	Device model	Online status	
() Historical data ~		1	Grid Meter		Meter	230621160203	DTSU666-CT	🗢 Online	
Plant info ~		2	🛞 🏢 TRENE 01		Cabinet	TRENE01	TRENE-P100B215I		
EMS Settings ~		7			Inverter	X3F150JB044001	X3-FORTH	😤 Online	
								Total: 3 < 1 > 10 / P	age 👻 Goto

Figure 6-12 Paring device

## Paired devices

Cabinets and sub devices that have been successfully paired will be displayed under **Paired device**. You can view the cabinet image, name, model and SN of the inverter, battery and IO module.



Figure 6-13 Device pairing succeeded

#### • Unpaired device

Inverters, batteries and IO modules that fail to be bound to a cabinet will be displayed here along with their type, SN, associated device SN, and device model.

Unpaired device Device has not detected a connection with other devices. Please check The wiring and by again				
No.	Device type	SN	Associated device SN	Device model
1	Battery	HR14AJ916AC002	SOLAXPOWERLITD	TB-HR140
2	IO Module	SOLAXPOWER.LTD	-	/
				Cancel Save and pre-check

Figure 6-14 Devices failed to pair

Related operation:

- Click Repair under Paired device to pair cabinets and their devices again.
- Click Save and pre-check to save the current device list and update the Device List.

## 6.5.3 Viewing Devices

Log in to the webpage, and then click Device list.

The paired devices will be displayed here in hierarchy. The grid-connected meter and cabinets will be displayed under **Device list**, and you can click + and - to unfold and fold the sub devices under the cabinet.

SOLAX	Devi	ice list > Device list	t					Q* 🕀 🚷 edmi
Overview     Device list		Online status:	Plesse choose	Device type:	Please choose	•		Q Search Reset
System overview System managements	1	Device list	2					+ Add device OS Device pairing
System pre-check		No.	Device name		Device type	Serial no.	Device model	Online status
System settings		1	Grid Meter		Meter	171634443162	DTSU666-CT	🗢 Online
Work mode		2	😑 🛐 AELIO 01		Cabinet	AELIO01	P508100	
Parameter settin		3	inverter 01		Inverter	10H1S0010B020E	X3-Aelio	Online
Export control		4	Battery Cluster 01		Battery	90181001000105	TB-HR140	🗢 Online
Ripple control		5	IO Module 01		10 Module	1058Y1010E0111	7	🗢 Online
<u> 谷</u> Alarm info		6	🕀 🛐 AELIO 02		Cabinet	AELIO02	P508100	
🕒 Historical data 🗸 🗸		10	1 AELIO 03		Cabinet	AELI003	P508100	
<ul> <li>Plant info ~</li> <li>EMS settings ~</li> </ul>							Total: 4	C 1 > 10/Page v Goto

Figure 6-15 Viewing device information

Device information includes device name, device type, serial No., device model and online/ offline status. You can set the number of devices to be displayed per page to 10, 20, 30, 40 and 50, and directly enter the page number to go to a defined page.

# 6.5.4 Searching for Devices

Search for devices by online/offline status and device type.

- **Step 1:** Log in to the webpage, and then click **Device list**.
- Step 2: Set the search condition, and then click Search.

The search results will be displayed on **Device list** below.

SOLAX	De	vice list > Device list				0.0	🧶 admi
Overview     Overview     Device list	2	Online status: Please choose	Device type: Inverter	~		3 Q Search R	teset
System overview System management~	I	Device list				+ Add device (C) D	Nevice pairing
近 Alarm info		No. Device name	Device type	Serial no.	Device model	Online status	
🕑 Historical data 🗸		1 💼 Inverter 01	Inverter	10H150010B020E	X3-Aelio	Online	
Plant info ~		2 🚞 Inverter 02	inverter	10H1S001080209	X3-Aelio	🗢 Online	
EMS settings 🗸 🗸		3 💼 Inverter 03	Inverter	10H1S0010B020C	X3-Aelio	Online	
					Total: 3	< 1 > 10/Page ~	Goto

Figure 6-16 Searching for devices

Related operation:

Click **Reset** to clear all search conditions.

## 6.5.5 Deleting Devices

Devices added through RS485 terminals 1 to 6 can be deleted, such as meter, inverters and more.

## NOTICE!

This function is available only for the admin account.

- Step 1: Log in to the webpage, and then click Device list.
- Step 2: On Device list, click Delete on the line of the device that you want to delete, and then click Delete on the confirmation pop-up.

SOLAX	Device list + Device list							🕀 🔮 admir
Overview  Device list	Online status: Plea		Device type: Please choose				Q. Search	Reset
System overview System management~	Device list						+ Device addition	in 🔿 Device pairing
🔆 Alarm info	NO. D	evice name	Device type	SN	Device	model	Online status	Operation
Historical data ~	1	Grid Meter	Meter	173586883905	DTSUS	66-CT	🌩 Online	Delete
Plant info ~	2	- 🔟 AELIO 01	Delete device		× AELIO	P608100		
EMS Settings 🗸 🗸	3	inverter 01		ou want to delete?	X3-AE	JD-60K	🗢 Online	
	4	Battery 01	Are you sure yo	u want to delete?	TB-HR	140	🗢 Online	
	5	Meter 01	Cancel	Delete	DTSUE	66 CT	🗢 Online	
	6	IO Module 01	IO Module	SOLAXPOWERLTD			🌩 Online	
							Totat 2 < 1 > 1	0/Page - Goto

Figure 6-17 Deleting devices

# 6.6 System Overview

In this menu, devices in the system are arranged into a device tree. You can view the detailed information, historical data and other information of each device, and edit the device information.

#### NOTICE!

The system structure and its affiliated devices mentioned in this manual are for reference only.

## System Architecture

EMS1000 is on the first tier, managing all devices that are connected to it. These devices are further divided into the grid side, energy storage photovoltaic or energy storage, and solar. You can click 
or 
to unfold or fold the sub devices, and enter the device name in the search box to search for a certain device.



Figure 6-18 System architecture

# **Refreshing Data**

The system data is refreshed every 1 minute by default. You can set the data refreshing interval to 1, 3 or 5 minutes as needed, or click **Refresh** to manually update the system data at any time. The latest data refreshing time will displayed.

Data refresh time:	2024-06-13 15:53:57	Data refresh interval:	1Min	C Refresh
			1Min	
			3Min	L I
			5Min	L 1

Figure 6-19 Refreshing data

# 6.6.1 EMS1000

EMS1000 is at the top of the device tree, managing all devices that are listed under it. In the menu of EMS1000, you can view the information on the Device, the system data and wiring diagram.

# Real-time Data

View the image, information and terminal status of EMS1000, and its communication status with SolaXCloud platform.

Log in to the webpage, and then select **System overview > EMS1000 > Real-time data**.

SOLAX	System overview				🕀  😍 admir
a Overview	Please enter Q	Real-time data Wiring diagram	n	Data refresh time: 2025-01-21 10:03:31 Data refresh inter	val: 1Min 🙄 Refree
Device list     System overview	- ■ EMS1000	Q	EMS Device status : 🗢 Online		
設 System management〜 <u> </u> Alarm info	✓ Els Grid Orid Meter		Basic info		
Historical data	👻 🔠 Energy Storage		EMS SN	XMG0050156	
Plant info ~	<ul> <li>TRENE 01</li> </ul>		System time	2025-01-21 10:03:32	
🖶 EMS Settings 🗸 🗸	Meter 01		Device model	EMS1000	
	Battery 01		Software version	V007.10	
	Air Conditioning	See 1.9			
	Supervision System		Other info		
		•	NET1 IP	192.168.11.10	
			NET2 IP	-	
			NET3 IP	192.168.11.10	
			NET4 IP	-	
			Available storage	105G8	

Figure 6-20 Device detailed information

Parameter	Description
Device status	<ul> <li>The connection status between EMS1000 and SolaXCloud platform</li> <li>Online: EMS1000 is connected to SolaXCloud platform</li> <li>Offline: EMS1000 is disconnected from SolaXCloud platform</li> </ul>
NET IP	The connection status of the 4 NET ports of EMS1000. If the NET port is connected, the IP address will be displayed.
Hotspot ID	Name of EMS1000 hotspot
Hotspot IP Address	IP address that is used to access EMS1000 webpage when EMS1000 is connected to the computer through its hotspot. It is 192.168.10.10 by default.
DI status	
DO status	— The connection status of each DI and DO port

Table 6-8 EMS1000 parameter description

# System Architecture

View the core power data of the system, and the system wiring diagram involving the gridconnected meter, cabinet, external inverter and load, and their power consumption data.

Log in to the webpage, and then select System overview > EMS1000 > Wiring diagram.

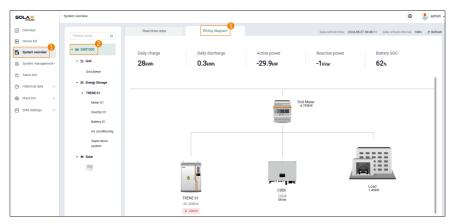


Figure 6-21 System wiring diagram

Table 6-9	System	architecture	description
-----------	--------	--------------	-------------

Parameter	Description
Daily charge	Amount of power that has been charged into the battery on the day
Daily discharge	Amount of power that the battery has discharged on the day
Active power	Total amount of output active power from the system
Reactive power	Total amount of output reactive power from the system
Battery SOC	Battery SOC in real time

# **Viewing Cabinet Information**

You can also click the cabinet image to view more details on the it, including its sub devices and related device data.



Figure 6-22 Cabinet architecture

Table 6-10	Cabinet information	description
------------	---------------------	-------------

Parameter	Description
Supervision system	Operation status of the supervision system inside the cabinet
Air Conditioning	Operation status of the air conditioner, and the temperature and relative humidity data inside the cabinet
Cabinet	Displays the output power of the inverter in the cabinet
Inverter	Displays the active and reactive power of the inverter
BMS	Displays the battery SOC, battery voltage and current

# **Viewing Battery Information**

On the information page of a single cabinet, you can continue to click the BMS image to view key cell information on the battery cluster. This helps you keep the battery status in control for the long-term stable operation of the system.

	1#Battery cluster							
07 80	100% 0.37V							
06	0A							
05 50								
04	Maximum cell voltage:							
03	3.4V							
	Minimum cell voltage:							
02	3.34V							
	Maximum cell temperature:							
01 50	28°C							
:	Minimum cell temperature:							
	24°C							

Figure 6-23 Viewing battery cluster information

ltem	Description
Maximum cell voltage	The highest cell voltage among all cells of the battery packs
Minimum cell voltage	The lowest cell voltage among all cells of the battery packs
Maximum cell temperature	The highest cell temperature among all cells of the battery packs
Minimum cell temperature	The lowest cell temperature among all cells of the battery packs

#### Table 6-11 Battery cluster parameter description

# 6.6.2 Grid Meter

The grid meter refers to the gird-connected metering device that is connected to EMS1000 for monitoring the power flow of the system. Currently, three types of metering devices are supported: DTSU666-CT meter, Wi-BR DTSU666-CT meter, and CT.

## Viewing Real-time Data

View the running status and basic information of the metering device, and the real-time power-related data of the entire system that the device detects.

Log in to the webpage, and then select **System overview** > **Grid** > **Grid meter** > **Real-time data**.

## • DTSU666-CT

View the online/offline status, SN and model of the meter, and the system power data collected by the meter, including the energy imported from and exporting to the grid, and other data on each phase.

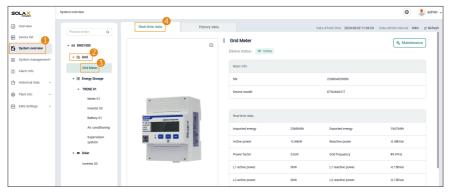


Figure 6-24 Viewing real-time data of DTSU666-CT

# • Wi-BR DTSU666-CT

View the SN and model of the meter, the SN of the AP and STA models of Wi-BR, and the system power data collected by the meter.

SOLAX	System overview	2					0.0	👂 admin 🦂
@ Overview	Please enter Q	Real-time data Histo	ry data		Data re	fresh time: 2024-08-27 15:47:55	Data refresh interval: 1Min	2 Refresh
B Device list	▼ @ EMS1000		Q	Grid Meter			4, Maintenance	.
System overview	Grid Meter		Q	Device status : 🗣 Online				- I
88 System management~	* EE 2			Basic info				
当 Alarm info ④ Historical data ~	Meter 03			SN				11
Plant info ~	Inverter 03 Battiery Cluster 03			Device model	w	HBR DSTU666-CT		
EMS settings ~	Air conditioning			AP Module SN		and the second se		
	Supervision system			STA Module SN				
	> 00 3mm							_
	· # 1			Real-time data				11
	► 00 41mm			Consume energy	110352kWh	Feed-in energy	33535kWh	
				Active power	1.04kW	Reactive power	15.52kVar	
				Power factor	0.002	Grid frequency	50.01Hz	
				L1 active power	-0.2kW	L1 reactive power	1.44kVar	
				L2 active power	-2.2KW	L2 reactive power	5.84kVer	

Figure 6-25 Viewing real-time data of Wi-BR DTSU666-CT

## • CT

View the online/offline status of CT and the system power data collected by the CT.

SOLAX	System overview	•				🕀  🚷 admir
Overview	Please enter Q	Real-time data History data		c	Data refresh time: 2024-08-27 15:57:31	Data refresh interval: 1Min 🖙 Refres
Device list     System overview	• @ EMS1000 • Ek Grid	Q	Grid Meter Device status : 🌩 Online			0, Maintenance
器 System management~ 並 Alarm info ④ Historical data ~	Grid Meter Benergy Storage Photovoltaic		Real-time data Imported energy	4382.73kWh	Exported energy	3734.19kWh
Plant info ~	* AELIO 01		Active power	-0.14kW	Reactive power	Okvar
🖻 EMS Settings 🗸 🗸	Meter 01		L1 active power	-0.06kw	L1 reactive power	Okvar
	Battery 01		L2 active power	-0.04kW	L2 reactive power	OkVar
	Air conditioning		L3 active power	-0.04kW	L3 reactive power	OkVar
	Supervision system					

Figure 6-26 Viewing real-time data of CT

You can also click **Maintenance** on the upper-right corner to view more details on the gird-connected metering device.

Device maintenance ×					
Device info					
Device name	Grid Meter	Device SN	(		
Device model	DTSU666-CT	Connect EMS Registration Number			
Electricity meter type	Grid Meter	Add time	2024-08-19 18:04:25		

Figure 6-27 Meter information on the Maintenance page

Table 6-12	Meter information	on the	Maintenance page
------------	-------------------	--------	------------------

Data Type	Description	Remarks		
Device SN	SN of the meter	Available only when the		
Device model	Model of the meter	-meter type is DTSU666- CT or Wi-BR DTSU666-CT		
Connect EMS registration number	Registration No. of the EMS1000 that the meter is connected to	1		
Electricity meter type	Grid-tied meter	/		
Add time	Time that the meter establishes communication with EMS1000	1		

# **Maintaining Grid Meter**

You can edit the name of the meter, perform Meter/CT check and enable communication loss shutdown if needed.

Log in to the webpage, and then select  $System \ overview > Grid > Grid \ meter > Real-time \ data > Maintenance.$ 

SOLAX	System overview					•	🧶 adm
J Overview	Please enter a	Real-time data History data	a	Data refresh	time: 2024-09-02 11:18:24	Data refresh interval: 1Min	2 Refo
Device list     System overview     System management~	rease enter Q ← En EMS1000 ← En Grid	Q	Grid Meter Device status : 😤 Online			🔍 Maintenan	•
<u> Alarm Info</u> ( Historical data ~	Grid Meter		Basic info SN	2308	04033686		
Plant info ~ EMS Settings ~	★ TRENE 01     Meter 01		Device model	DTSL	J666-CT		
m para seringa 🔍	Inverter 02 Battery 01 Air conditioning		Real-time data				
	Supervision system		Imported energy Active power		active power	1947kWh -0.49kVar	
	+ 🗰 Solar		Power factor	0.624 Gri	d frequency	50.03Hz	
	Inverter 03		L1 active power	0kW L1	reactive power	-0.15kVar	
			L2 active power	0kW L2	reactive power	-0.16kVar	
			L3 active power	-0.51kW L3	reactive power	-0.18kVar	

Figure 6-28 Maintaining the grid meter

• Editing the Device Name

Under **Device operation**, click **Edit device**, enter a new name on the pop-up for the meter, and then click **Confirm**.

Edit device	×
* Device name:	
Please enter	
	0
	Cancel

Figure 6-29 Editing the meter name

## • Performing Meter/CT Check

This is for checking whether the meter/CT on the grid side has been correctly connected. If not, there will be a notice for the specific problem so that you can adjust the meter/CT connection in time. The whole checking process takes around 2 minute.

## NOTICE!

Currently, Meter/CT check function is only available in AELIO system.

Under Device operation, click Meter/CT check, and then click Check to start the process.

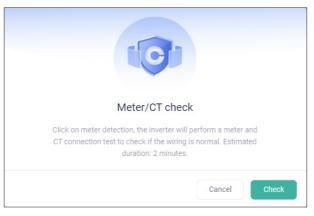


Figure 6-30 Performing Meter/CT check

## Reverse Setting

Enable the function when the system power data is reverse to the actual power flow. This feature allows the meter to automatically rectify the system power data without need for physcial rewiring. It is disabled by default.

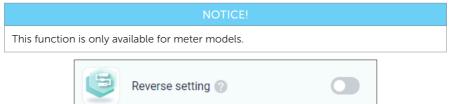


Figure 6-31 Enabling reverse setting

## Communication Shutdown Loss

Enable this function to automatically shut down the system when EMS1000 loses communication with the grid meter. This is to ensure that the system power flow is kept in control, especially in the on-grid mode. The function is enabled by default.

If you manually disable it, the system can remain normal operation, but certain functions might be affected, such as zero output, demand control, data statistics and more.

Device op	peration
	Edit device
2	Meter/CT check
۷	Communication loss shutdo 🔞

Figure 6-32 Enabling communication loss shutdown

• Wi-BR Power Control

NOTICE!

This function is available only when Wi-BR DTSU666-CT is connected as the meter.

Adjust Wi-BR to a low or high power rate mode to suit different scenarios. Higher power rate can provide enhanced signal strength and longer communication distance.

- Step 1: Under Device operation, click Wi-BR power control.
- Step 2: Select High power mode or Low power mode from the drop-down list, and then click Ok.

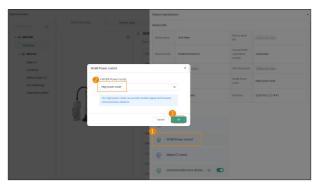


Figure 6-33 Setting power mode for Wi-BR

# **Viewing History Data**

You can search for multiple types of data that the meter collected, including the voltage, current, and active power of each phase, and the total active, reactive and apparent power of the three phases, gird frequency, and the imported and exporting power of the entire system. The search results will be displayed in the line chart.

- Step 1: Log in to the webpage, and then select System overview > Grid > Grid meter > History data.
- Step 2: Set the Time, select the Indicators, and then click Check.

Up to 4 search indicators can be selected at one time, and the results will be displayed in lines of different colors in the line chart.

SOLAX	System overview	📵 🐍 adm
Overview	Please enter Q	Real-time data Data refresh time: 2024-09-02 11:27:10 Data refresh interval: 1Min 2 Refr
B Device list		Statistical analysis of electricity meters
System overview System management	+ ⊕ EMS1000	Time: 202409-27 - 202409-02 E Select indicators: 11 Ventey K v
Alarm info	Grid Meter	
(b) Historical data ~	👻 🔠 Energy Storage	250
Plant info ~	<ul> <li>TRENE 01</li> <li>Meter 01</li> </ul>	150
EMS Settings 🗸 🗸	Inverter 02	100
	Battery 01	50
	Air conditioning	2024.68.59 2024.08.50 2024.68.50 2024.68.50 2024.68.51 2024.68.51 2024.68.51 2024.68.51 2024.69.51 2024.69.61
	Supervision system	🖬 13 Voltage

Figure 6-34 Searching for history data

# 6.6.3 Cabinet

## NOTICE!

The cabinet system name might be Energy Storage or Energy Storage Photovoltaic depending on the inverter type. For AELIO system, the cabinet system name is Energy Storage Photovoltaic; For TRENE system, the cabinet system name is Energy Storage.

## **Viewing Cabinet Information**

View the running status and basic information of the cabinet, information on the embedded IO module, and real-time data of the battery system.

Log in to the webpage, and then select **System overview** > > **Energy Storage Photovoltaic/ Energy Storage** > **Cabinet**.

SOLAX	System overview							•	🧶 admin 🗸							
a Overview	Please enter Q	Device details				Data ref	fresh time: 2024-09-02 11:41:11	Data refresh interval: 1Mir	🗢 Refresh							
Device list	Prease enter Q → ⊕ EMS1000		Q		TRENE 01			🖏 Maintenar	100							
88 System management~	► Et Grid				Device status : 🗢 Online 🔹 Alam	m										
首 Alarminfo	- Energy Storage				Basic info											
() Historical data ~					SN	TRENE01										
Plant info ~	Meter 01	9			Device model	TRENE-P1008215										
🖻 EMS Settings 🗸 🗸	Battery 01			-		Sub device	Battery 01 Inverter 03	2 Meter 01								
	Air conditioning															
	Supervision system			10 Module Info												
	system 🚔 🚺 🕯											10 Module SN				
				10 Module version 001.97												
			•		10 Module Hardware	1										
									- 1							
					Battery system data											
					Total battery voltage	791.1V	Total battery current	0A								
3					Battery health	99.8%	Battery SOC	39%								

# Figure 6-35 Cabinet information

Table 6-13 Real-time data description	Table 6-13	Real-time data description
---------------------------------------	------------	----------------------------

Data Type Parameter		Description
Device status	/	Displays the online/offline status of the battery, and the operation status of devices in the cabinet.
Basic info	Sub device	Devices that are included in the cabinet for management
Battery system	Total battery voltage	Total voltage of the battery cluster that is connected to cabinet
data	Total battery current	Total voltage of the battery cluster that is connected to cabinet
	Battery health	Health status of the battery cluster that is connected to cabinet
	Battery SOC	SOC of the battery cluster at the time
Battery system	Chargeable Capacity	Amount of power that can be charged into the battery cluster before it is fully-loaded
data	Remaining Capacity	Amount of power that the battery cluster can discharge
	Total charge	Total amount of power that has been charged into the battery cluster by the time
	Total discharge	Total amount of power that the battery cluster has discharged by the time

## Webpage Operations

Data Type	Parameter	Description
Battery system data	Cycle time	Number of times that the battery cluster has been fully charged and discharged. A full charge and discharge make a cycle.
	Insulation Resistance	Equivalent impedance between the battery cluster and PE point of the device enclosure

You can also click **Maintenance** on the upper-right corner to view more information on the cabinet.

Device info						
Device name	Cabinet 002	Device SN	Aelio01			
Device model	AELIO-P50B100	Software version	R1400V_001.R12			
Hardware version	1	Add time	2024-05-17 14:28:52			

Figure 6-36 Cabinet information on the Maintenance page

Table 6-14 Meter information on the Maintenance page

Data Type	Description
Add time	Time that the sub devices in the cabinet complete pairing

## **Maintaining Cabinet**

Edit the cabinet name and upgrade the firmware of the IO module in the cabinet.

Log in to the webpage, and then select **System overview** > **Energy Storage Photovoltaic/ Energy Storage** > **Cabinet** > **Device details**.

SOLAX	System overview						😁 🔳 adr	min +				
(J) Overview	Please enter Q	Device details			Data refres	ih time: 2024-09-02 11:41:11	Data refresh interval: 1Min 😂 Ref	rfresh				
B Device list			0	TRENE 01			A Maintenance	7				
System overview	✓   EMS1000 ► By Grid		۲	Device status : 🗇 Online 🔹 Al	larm			I.				
88 System management~	* III Energy Storage			Basic info				I.				
当 Alarminfo (9) Historical data ~	+ TRENE 01			SN	TRENE01			I.				
Plantinfo v	Meter 01			Device model	TRENE-P1008215			I.				
EMS Settings V	Inverter 02 Battery 01			Sub device	Battery 01 Inverter 02	Meter 01		I.				
	Air conditioning							I.				
	Supervision system	<b>≜ II</b> *		10 Module Info			I.					
	> 🕸 Solar								IO Module SN			
				10 Module version	001.97			I.				
				10 Module Hardware	1			I.				
								1				
				Battery system data								
				Total battery voltage	791.1V	Total battery current	0A					
a				Battery health	99.8%	Battery SOC	39%					

Figure 6-37 Maintaining the cabinet

• Editing the Cabinet Name

Click **Maintenance** > **Edit device**, enter a new name for the cabinet, and then click **Confirm**.

Edit device	×
* Device name: 1 Please enter	2
Cancel	nfirm

Figure 6-38 Editing cabinet name

• Upgrading the IO Firmware

## NOTICE!

The IO firmware upgrade function is only available for the admin account.

Click **Maintenance** > **Firmware upgrade**, click **Choose file**, import the update firmware file, and then click **Upgrade**.



Figure 6-39 Upgrading IO firmware

# 6.6.4 Cabinet Meter

View the real-time data and historical data of the cabinet system collected by the cabinet meter.

## Viewing Real-time Data

View the online/offline status, SN and model of the meter, and the real-time power data of the cabinet system.

Log in to the webpage, and then select **System overview > Energy Storage Photovoltaic/** Energy Storage > Cabinet > Cabinet meter > Real-time data.

SOLAX	System overview				Θ	🧶 admin 🗸
J Overview	Please enter Q	Real-time data History data		Data refresh tim	e: 2024-08-27 17:34:11 Data refresh interval:	1Min @ Refresh
B Device list	• @ EMS1000	Q	Meter 01 Device status :  Online		🔍 Maint	enance
System management~	+ Bo Grid Grid Meter		Basic info			- 1
近 Alarm Info 〇 Historical data 〜	TRENE 01		SN			
<ul> <li>Plant info</li> <li>EMS Settings</li> </ul>	Meter 01		Device model	DTSU66	6-CT	-
	Battery 01		Real-time data			
	Air conditioning Supervision		Imported energy		ed energy 1739.26Wh	_
	system		Active power		ve power -2.09kVar	_
	v u sola		Power factor		equency 49.97Hz	_
			L2 active power		otive power -0.72kVar	—

Figure 6-40 Detailed information of the cabinet meter

Parameter	Description
Imported energy	Amount of power that the system in the cabinet imports from the grid
Exported energy	Amount of power that the system in the cabinet exports to the grid
Reactive Power	Total amount of reactive power that the system in the cabinet generates
Active Power	Total amount of active power that the system in the cabinet generates

## Table 6-15 Real-time data description

You can also click **Maintenance** on the upper-right corner to view more information on the cabinet.

Device info						
Device name	Meter 01	Device SN	-			
Device model	DTSU666-CT	Connect EMS registration number	tonglutest			
Electricity meter type	Energy storage meter	Add time	2024-05-17 14:28:52			

Figure 6-41 Cabinet meter information on Maintenance page

Table 6-16 Meter information on the Maintenance page

Data Type	Description		
Electricity meter type	Energy storage meter		
Connect EMS registration number	Registration No. of the EMS1000 that the meter is connected to		
Add time	Time that the meter establishes communication with EMS1000		

## **Maintaining the Cabinet Meter**

- Editing the Meter Name
- Step 1: Log in to the webpage, and then select System overview > Energy Storage Photovoltaic/Energy Storage > Cabinet > Cabinet meter > Real-time data.
- Step 2: Click Maintenance, click Edit device, enter a new name for the meter, and then click Confirm.

Edit device	×
* Device name: 1 Please enter	Cancel

Figure 6-42 Editing cabinet meter name

#### Reverse Setting

Enable the function when the system power data is reverse to the actual power flow. This feature allows the meter to automatically correct the system power data without need for physcial rewiring. It is disabled by default.

NOTICE!	
This function is only available for meter models.	
Beverse setting	

Figure 6-43 Enabling reverse setting

## Viewing History Data

You can search for multiple types of data that the meter collected, including the voltage, current, and active power of each phase, total active, reactive and apparent power of the three phases, gird frequency, and import and export power of the entire system. The search results will be displayed in the line chart.

# Step 1: Log in to the webpage, and then select System overview >> Energy Storage Photovoltaic/Energy Storage > Cabinet > Cabinet meter > History data.

Step 2: Set the Time, select the Indicators, and then click Check.

Up to 4 search indicators can be selected at one time, and the results will be displayed in lines of different colors in the line chart.

SOLAX	System overview	D 🕘 🕹 admin -
J Overview	Please enter Q	Real-time data Data refresh time: 2024-06-14 10:58:06 Data refresh interval: 11Min 🗷 Refresh
Device list	+ ⊕ EM\$1000	Statistical analysis of electricity meters
88 System management~	Grid Meter	Time: 2024-06-08 - 2024-06-14 E Select indicators: L1 Votage x L2 Votage x L1
首 Alarminfo	• B Cabinet 002	Y . A
( Historical data ~	10H1S001030104	
8 Plant info ~	Battery Rack 001- Battery1	150 30
EMS settings v	Air conditioning	100         20           500         10
	Supervision system	0 0 2014/06-08 2014/06-09 2014/06-09 2014/06-09 2014/06-10 2014/06-10 2014/06-10 2014/06-11 2014/06-100000000000000000000000000000000000
		energie interes callere interes callere energie interes callere energie energie callere energie energie energie

Figure 6-44 Searching for history data

## 6.6.5 Inverter

View the information, real-time data and historical data of the inverter.

# Viewing Real-time Data

View the working status of the inverter, basic information on the inverter, and the related power data of the PV system.

Log in to the webpage, and then select **System overview > Energy Storage Photovoltaic/** Energy Storage > Cabinet > Inverter > Real-time data.

## NOTICE!

The **Real-time data** page of the inverter might vary depending on the model of the inverter. X3-AELIO, X3-TRENE-100KI and X3-TRENE-100KI models are used for example to demonstrate the different page layout.

## X3-AELIO

You can view the online/offline status, system switch on/off status, and working condition of the inverter. The real-time power data of the system is divided into multiple dimensions, such as PV data, AC data, EPS data, battery data and more. You can click the data type to view specific statistics.

SOLAX	System overview						•	🗶 admi
Overview	Please enter Q	Real-time data History data		D	ata refresh time: 2024	4-09-02 13:50:01	Data refresh interval: 1	Min 😂 Refre
B Device list	- @ EMS1000	Q	Inverter 01				🖣 Mainte	nance
8 System management~	* (3) Grid		Online status : 🗢 Online	System switch : • On	Working condition	on : Normal		
🖞 Alarm info	Grid Meter		Basic info					
9 Historical data 🗸 🗸	BE Energy Storage     Photovoltaic	a a a	SN					
Plant info ~	AELIO 01  Meter 01		Device model	X3	AELIO			
EMS Settings ~	Inverter 01	SOLAX	Connect Battery Cluster SN		•	Connected		
	Battery 01		Parallel state	En	te .			
	Air conditioning Supervision	•						
	system	1	Real-time data					
			PV Data AC Data	EPS Data BAT Data	Energy Data	Other data	5 6	
			Input voltage	0V 0V	σv	ov	0V 0V	
			Input current	A0 A0	0.4	0A	0A 0A	
			Input power	0kW 0kW	DKW	OkW	0kW 0kW	

Figure 6-45 Viewing real-time data of the X3-AELIO inverter

Table 6-17	Inverter of	data	description

Data Type	Parameter	Description
	Online status	Communication status of the inverter and EMS1000
Working status	System switch	On/off status of the inverter system switch
	Working condition	Whether the inverter is running normally
Basic info	Connect Battery cluster SN	SN of the battery cluster that the inverter is connected to
	Parallel state	Whether the inverter is connected to other inverters or not; if yes, the role of the inverter in the connection will be displayed, which can be master or slave. If not, the inverter is free.
	PV data	The input voltage, current and power of each MPPT
	AC data	The power data from the grid into the inverter, such as total power, voltage, current and more of each phase
Real-time data	EPS data	The power data of the inverter EPS side, such as the different types of power, voltage, frequency of each phase
	BAT data	The voltage, current and power of each battery cluster that has been connected to the inverter
	Energy data	Daily and total inverter input and output, and daily and total yield power of the inverter and EPS
	Other data	Includes inverter radiator temperature, internal temperature and bus voltage

You can also click **Maintenance** on the upper-right corner to view more details on the inverter.

Device info						
Device name	10H1S001030104	Device SN				
Device model	X3-AELIO	ARM	002.00			
DSP	001.01	Connect type	MODBUS-RTU			
COM Port	1	Address	1			
Add time	2024-05-17 14:28:50					

Figure 6-46 X3-AELIO information on Maintenance page

Table 6-18	X3-AELIO	information on	the Maintenance	page
------------	----------	----------------	-----------------	------

Data Type	Description			
Connect type Communication protocol through which the inverter is connect EMS1000: MODBUS-RTU.				
COM port	No. of the COM port			
Address Modbus address of the inverter for communication				
Add time	Time that the inverter establishes communication with EMS1000			

## • X3-TRENE-100KI

You can view the online/offline and operation status of the inveter, its basic information and related power data.

SOLAX	System overview						•	🐉 admir				
al Overview	Please enter Q	Real-time data	History data		Data refre	sh time: 2024-09-02 13:34:22	Data refresh interval: 1Min	2 Refres				
B Device list				Inverter 02			Q, Maintenanc	<u>_</u>				
System overview			Q				- a manner	~				
System management~	Be Grid			Device status : 🗢 Online 🏾 • Stan	icity							
<u> Alarm Info</u>	BE Energy Storage			Basic info								
🕒 Historical data 🗸 🗸	TRENE 01			SN								
Plant info ~	Inverter 02	4 Inverter 02	Device model		X3-TRENE-100K							
EMS Settings ~	Battery 01	·		annexes and here		Connect Battery Cluster SN						
	Air conditioning											
	Supervision system	SOL		· 🎆 · 🎽	·	·		Real-time data				
	👻 🗰 Solar			AC Data BAT Data Energ	gy Data Other data							
	Inverter 01	·		AC Active Power	OKW	AC Reactive Power	OkVar					
				AC Apparent Power	0kVA	AC Power Factor	1					
				AC Frequency	50.04Hz							
				L1 voltage	238.6V	L1 current	0A					
				L2 voltage	241.2V	L2 current	0A					

Figure 6-47 Viewing real-time data of X3-TRENE-100KI

# Table 6-19 Inverter data description

Data Type	Parameter	Description
Status	Device status	Includes the online/offline status and operation status of the inverter
Basic Info	Connect battery cluster SN	SN of the battery cluster
	AC active power	Active power from the inverter AC terminal
	AC reactive power	Reactive power from the inverter AC terminal
	AC apparent power	Apparent power from the inverter AC terminal
	AC frequency	Frequency of the inverter AC terminal
Real-time data	Module temperature	Temperature of the inverter
	DC voltage	Voltage of the inverter DC terminal
	DC current	Current of the inverter DC terminal
	DC power	Power from the inverter DC terminal
	Charge today	Amount of power that has been charged into the battery on the day

Data Type	Parameter	Description	
		··	
Real-time data	Discharge today	Amount of power that the battery cluster has discharged on the day	
	Total charge	Total amount of power that has been charged into the battery cluster	
	Total discharge	Total amount of power that the battery cluster has discharged	

You can also click **Maintenance** on the upper-right corner to view more details on the inverter.

Device info					
Device name	Inverter 01	Device SN			
Device model	X3-TRENE-100KI	ARM Version	2.1.5		
DSP Version	679.6	Connect type	MODBUS-TCP		
IP	-	Add time	2024-05-20 19:41:58		

Figure 6-48 X3-TRENE-100KI information on Maintenance page

Table 6-20 X3-TRENE-100KI information on the Maintenance page

Data Type	Description
Connect type	Communication protocol through which the inverter is connected to EMS1000: MODBUS-TCP.
IP	IP address of the inverter
Add time	Time that the inverter establishes communication with EMS1000

# • X3-TRENE-100K

View the online/offline and operation status of the inveter, its basic information and related power data.

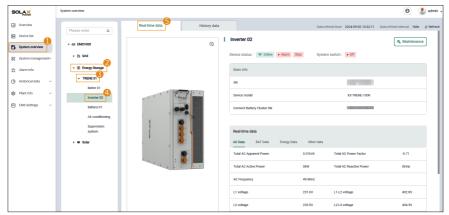


Figure 6-49 Viewing real-time data of X3-TRENE-100K

Data Type	Parameter	Description	
Status	Device status	Includes the online/offline status and operation status of the inverter	
Status	System switch	On/off status of the inverter system switch	
Basic Info	Connect battery cluster SN	SN of the battery cluster	
	AC data	Displays the data from the grid into the inverter, such as apparent power, active and reactive power, and voltage, current of each phase	
Real-time data	BAT data	Includes inverter BAT voltage, current and power	
	Energy data	Includes daily AC active power, total discharge, daily AC charge and total charge	
	Other data	Includes inverter internal temperature, balance bridge temperature, inverter module temperature, fa speed and more.	

Table 6-21 Inverter data description

Device maintenar	evice maintenance				
Device info	Device info				
Device name	Inverter 01	Device SN	A REAL PROPERTY.		
Device model	X3-TRENE-100K	Software version	3.05		
ARM	3.05	DSP	3.05		
Slave DSP Version	3.05	Connect type	MODBUS-TCP		
Address		Add time	2024-08-22 12:42:52		

You can also click **Maintenance** on the upper-right corner to view more details on the inverter.

Figure 6-50 X3-TRENE-100K information on Maintenance page

Table 6-22 X3-TRENE-100K information on the Maintenance page

Data Type	Description
Connect type	Communication protocol through which the inverter is connected to EMS1000: MODBUS-TCP.
IP	IP address of the inverter
Add time	Time that the inverter establishes communication with EMS1000

# Maintaining the Inverter

Edit the inverter name and upgrade the firmware for it.

Log in to the webpage, and then select **System overview** > **Energy Storage Photovoltaic/ Energy Storage** > **Cabinet** > **Inverter** > **Real-time data** > **Maintenance**.

SOLAX	System overview						•	🧶 admin
Overview	Please enter Q	Real-time data History data			Data refresh time: 2024	1-09-02 13:50:01	Data refresh interval: 18	Min 2 Refresh
Device list	- ← EMS1000	Q	Inverter 01				🔍 Mainten	1ance
88 System management~	+ En Grid		Online status : 🗢 Online	System switch : • Or	Working condition	on : Normal		-
並 Alarm info	Grid Meter		Basic info					
(G Historical data ~	BEnergy Storage     Photovoltaic	a a a	SN					
Plantinfo ~	AELIO 01     Meter 01		Device model		K3-AELIO			
EMS Settings ~	Inverter 01	SOLAX	Connect Battery Cluster SN			Connected		
	Battery 01 Air conditioning		Parallel state		Free			
	Supervision system	*						- 1
	system	l	Real-time data PV Data AC Data	EPS Data BAT Data	Energy Data	Other data		
		· · · · · · · · · · · · · · · · · · ·	мррт	1 2	3	4	5 6	
			Input voltage	0V 0V	σv	ov	ov ov	
			Input current	0A 0A	04	04	0A 0A	
			Input power	0kW 0kW	Okw	okw	0kW 0kW	

Figure 6-52 Maintaining the inverter

• Editing the Inverter Name

On the **Device maintenance** page, click **Edit device**, enter a new name for the inverter, and then click **Confirm**.

Edit device	×
* Device name:	
Please enter	
	0
	Cancel

Figure 6-53 Editing the inverter name

• Upgrading the Inverter Firmware

## NOTICE!

- The inverter firmware upgrade function is only available for the admin account.
- For X3-TRENE-100K, only one type of update file is supported.

Step 1: On Device maintenance page, click Firmware upgrade.

- Step 2: (Optional) On the Firmware Upgrade pop-up, select ARM or DSP for Upgrade module.
- **Step 3:** Click **Choose file** to import the update firmware file, and then click **Upgrade**.

Firmware upgrade				×
* Upgrade module:	1			
Please choose			^	
ARM				
DSP		0		
	Choose file			
		Cancel	Upgrad	3

Figure 6-54 Upgrading the inverter firmware

• Turning on or off the Inverter

Select **Maintenance > System ON/System OFF**, and then click **Ok** on the confirmation pop-up.

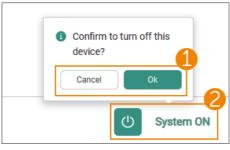


Figure 6-55 Turning on or off the inverter

# **Viewing History Data**

View one or more types of inverter-related power data in the line chart.

Inverter Analysis

You can view multiple types of data of the inverter, such as the voltage and current of each phase, frequency, and radiator temperature. The search results are displayed in line chart.

# Step 1: Log in to the webpage, and then select System overview > Energy Storage Photovoltaic/Energy Storage > Cabinet > Inverter > History data.

Step 2: In the Inverter analysis section, Set the search duration, select the search indicators from the drop-down list, and then click **Check**.

The maximum time interval is 7 days, and up to 4 items can be selected at one time. The search results will be displayed in lines of different colors in the line chart.

SOLAX	System overview		🕀  🚷 admin 🗸
a Overview	Please enter Q	Real-lime data Data refresh time: 2024-09-28 1454:19 Data refresh time: 2024-09-28 1454:19 Data refresh in	terval: 1Min 2 Refresh
Device list     System overview		Inverter analysis Time: 2024-09-22 - 2024-09-28 (5) Select indicators: [11/Wange X ]	Check
88 System management~	★ E: Grid		
查 Alarm info	Grid Meter		
🕒 Historical data 🗸	+ ⊞ Energy Storage + TRENE 01	250	
Plant info ~	Meter 01	200	
EMS Settings V	Inverter 01	100	
	Battery 01	50 2024-08-26 19/48/01 ● L1 Voltage: 234.5	
	Air conditioning	0	024-08-28 00154/07
	Supervision system	I 1 Voltage	

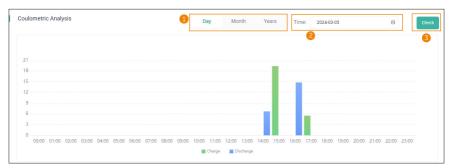
Figure 6-56 Viewing inverter statistics

## Coulometric Analysis

The charging and discharging data of the inverter can be displayed in bar chart by day, month and year.

## Step 1: Select System Overview > Inverter > History Data.

Step 2: In the Coulometric analysis section, select Day, Month or Year, set the specific day, month or year, and then click Check.



## Figure 6-57 Viewing coulometric data

You can also hover the mouse on any time node in the bar chart to view the specific charging, discharging and yielding data.

# 6.6.6 Battery

View information on the battery cluster, battery packs and battery cells.

## Viewing Real-time Data

View the status, basic information and real-time data of the battery cluster, and key data on the battery packs and cells.

Log in to the webpage, and then select **System overview > Energy Storage Photovoltaic/** Energy Storage > Cabinet > Battery > Real-time data.

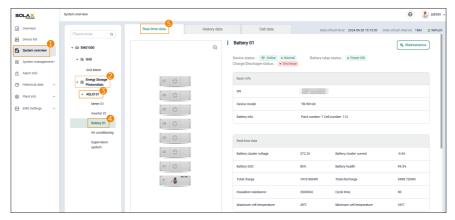


Figure 6-58 Viewing real-time data of the battery cluster

Data Type	Parameter	Description
	Device status	Includes the online/offline status and operation status of the inverter
Status	Battery relay status	Whether the battery cluster is powered on or off
	Charge/Discharge status	Whether the battery cluster is charging, discharging or idle
Basic info	Battery info	Displays the number of the battery packs and cells of the battery cluster
Real-time data	Total charge	Total amount of power that has been charged into the battery cluster
Real-time data	Total discharge	Total amount of power that the battery cluster has discharged

Table 6-23 Battery real-time data description

There is a list of battery pack information, in which you can view the key parameters of each battery pack of the battery cluster. You can draw the bar horizontally on the bottom of the list to view different information.

Battery pack SN	Software version	Hardware version	Communication status	Alarm status
	R140CV_001.R00	1	🛜 Online	Normal
-	R140CV_001.R00	1	🛜 Online	Normal
	R140CV_001.R00	1	🛜 Online	Normal
-	R140CV_001.R00	1		Normal
	R140CV_001.R00	1	🛜 Online	Normal
-	R140CV_001.R00	1	🛜 Online	Normal
	R140CV_001.R00	1		Normal

Figure 6-59 Viewing real-time data of battery packs

Table 6-24	Battery pack	information	description
------------	--------------	-------------	-------------

Parameter	Description
Battery Pack SN	SN of the battery pack in the battery cluster
Communication Status	Communication status between the battery pack and battery cluster
Maximum cell temperature	Maximum cell temperature in the battery pack
Minimum cell temperature	Minimum cell temperature in the battery pack
Anode temperature	The anode temperature of the battery pack
Cathode temperature	The cathode temperature of the battery pack

You can also click **Maintenance** on the upper-right corner to view more details on the battery.

Jevice info			
Device name	Battery 01	Device SN	20D8YOA0000001
Device model	TB-HR140	HVU SN	SOLAXPOWER.LTD
Battery software version	002.01	Battery hardware version	0
HvU Software Version	001.00	HvU Hardware Version	0
Add time	2024-07-31 17:03:07		

Figure 6-60 Battery information on the Maintenance page

Table 6-25 Battery information on the Maintenance page

Parameter	Description
Add time	Time that the battery establishes communication with EMS1000

# **Maintaining the Battery**

Edit the battery name and upgrade the firmware of the battery cluster.

Log in to the webpage, and then select **System overview** > **Energy Storage Photovoltaic/ Energy Storage** > **Cabinet** > **Battery** > **Real-time data**.

SOLAX	System overview					۰ 🗶	admin
(J) Overview	Please enter Q	Real-time data	History data	Cell data	Data refresh time: 2024-08-2	8 15:13:30 Data refresh interval: 1Min 🕿	Refresh
B Device list	• @ EM\$1000		Q	Battery 01		A Maintenance	
88 System management~	+ Bi Grid			Device status : 🌩 Online • Normal Charge/Dischagre status : • Discharg		N	
	Crid Meter	07 ( <sup>32</sup> / <sub>25</sub> )		Basic Info			
Historical data      V     Plant info      V	· AELIO 01	06 \$25		SN			
🖶 EMS Settings 🗸 🗸	Meter 01	05 3 <sup>Do</sup>		Device model Battery info	TB-HR140 Pack number: 7 Cell number: 112		
	Battery 01	0.4 322		builty into			
	Supervision system	$\begin{bmatrix} 0.3 & \frac{322_{s}}{6R^{2}} \end{bmatrix}$		Real-time data			
		02 37%		Battery cluster voltage	372.2V Battery cluster curr	ent -0.5A	
		01 520		Battery SOC	80% Battery health	99.5%	
		: 4		Total charge	7476.95kWh Total discharge	6998.72kWh	
				Insulation resistance	20000k0 Cycle time	80	
				Maximum cell temperature	28°C Minimum cell temp	erature 26°C	

Figure 6-61 Maintaining the battery

#### • Editing the Battery Name

Click **Maintenance** > **Edit device**, enter a new name for the cabinet, and then click **Confirm**.

Edit device	×
* Device name: 1 Please enter	
	Cancel Confirm

Figure 6-62 Editing the battery name

• Upgrading the Battery Firmware

NOTICE!

The battery firmware upgrade function is only available for the admin account.

Click **Maintenance** > **Firmware upgrade**, click **Choose file**, import the update firmware file, and then click **Upgrade**.

Firmware upgrade		×
	Choose file	
	C	ancel Upgrade

Figure 6-63 Upgrading the battery firmware

## **Viewing History Data**

View information on the battery cluster such as the voltage, current, SOC and more.

Step 1: Log in to the webpage, and then select System overview > Energy Storage

#### Photovoltaic/Energy Storage > Cabinet > Battery > History Data.

**Step 2:** Set the **Time**, select the **Indicators**, and then click **Check**.

The maximum time interval is 7 days, and up to 4 search indicators can be selected at one time. The search results will be displayed in lines of different colors in the line chart.

SOLAX	System overview		🕀 😍 admin 🗸
Overview	Please enter Q	Real-time data History data Cell data Data refresh time: 2024/09-02 14/21/48	Data refresh interval: 1Min 😂 Refresh
Device list	+ ⊕ EMS1000	Statistical analysis of battery clusters	
BS System management~	v En Grid	Time: 202409-27 - 202409-02 E Select indicators: Tatley duster votage x Tatley duster current x Tatley heath x	Check
道 Alarminfo ④ Historical data ~	Grid Meter		× 100
Plantinfo ~	+ AELIO 01	300 30	80
🗃 EMS Settings 🗸 🗸	Meter 01		• • • • • • • • • • • • • • • • • • •
	Air conditioning Supervision system		4-26-01 2024-08-02 52200 04/12:00

Figure 6-64 Searching for the battery history data

## Viewing Cell Data

View the cell number, voltage and temperature of the each cell. These data can be displayed in three modes: overview, histogram and sheet.

Log in to the webpage, select **System overview** > **Energy Storage Photovoltaic/Energy Storage** > **Cabinet** > **Battery** > **Cell data**, and then select the display mode.

50L <u>ax</u>	System overview								_							•	ء 😍
Overview	Please enter q	Rea	l-time data		ŀ	listory data		c	ell data			Data refresh	time: 20240	29-02 14:22:4	8 Data refi	esh interval:	1Min 21
B Device list	→ EM\$1000	Cell data	display									•	verview	В	istogram	<b>B</b> 8	heet
System overview																	
System management~	▼ En Grid	3.31V	3.311V	3.311V	3.311V	3.311V	3.311V	3.31V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V
Alarm info	Grid Meter	33°C	33°C	33°C	33°C	33°C	32'C	32'C	32°C	32°C	32°C	32°C	32°C	33°C	32°C	32°C	32°C
Historical data v	Photovoltaic	1-1	1-2	1-3	14	1-5	1-0	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-10
) Plant info ~	· AELIO 01																
	Meter 01	3.311V	3.311V	3.31V	3.311V	3.312V	3.311V	3.31V	3.311V	3.312V	3.311V	3.311V	3.31V	3.311V	3.311V	3.311V	3.31V
EMS Settings ~	Inverter 01	33°C	33'C	33°C	33°C	33°C	33°C	32'C	33'C	32'C	32°C	32°C	32°C	32°C	33°C	32°C	33°C
	Battery 01	2-1	2-2	2-3	2.4	2-5	2.6	2.7	2-8	2.9	2-10	2-11	2-12	2-13	2-14	2-15	2-16
	Air conditioning																
	Supervision	3.31V	3.31V	3.31V	3.31V	3.31V	3.31V	3.31V	3.31V	3.311V	3.31V	3.31V	3.31V	3.311V	3.31V	3.31V	3.311V
	system	33/C	33'C	34°C	33'C	34°C	33'C	33'C	33'C	33'C	33'C	33'C	33'C	33'C	33'C	33'C	33'C
		3-1	3-2	3-3	3-4	3.5	3-6	3-7	3-8	3-9	3-10	3-11	3-12	3-13	3-14	3-15	3-16
		3.311V	3.31V	3.31V	3.31V	3.31V	3.311V	3.31V	3.311V	3.311V	3.311V	3.311V	3.311V	3.311V	3.311V	3.311V	3.311V
		33110	3.31V	3.317	3.31V	3.31V 33°C	3311V 33°C	3.31V 33°C	3.311V 33°C	3.3117	3.3110	3.311V 33°C	3.3117	3.311V 337C	3.311V 337C	3.311V 33*C	3.311V 33°C
		4-1	4-2	4-3	4-4	4-5	4-6	4-7	4-8	4-9	4-10	4-11	4-12	4-13	4-14	4-15	4-16

Figure 6-65 Viewing cell data

## Overview

In this mode, the voltage, temperature and number of each cell is arranged in a spread-out manner. You can scroll up and down to view these data.

Cell data	display										verview	Ш. н	listogram		heet
3.311V	3.312V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V
26°C	26°C	26°C	26°C	26°C	26°C	26°C	26°C	26°C	26°C	25°C	26°C	26°C	26°C	26°C	26*C
1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-16
3.311V	3.311V	3.31V	3.311V	3.31V	3.31V	3.31V	3.31V	3.31V	3.31V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V
26℃	26°C	26°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	25°C	26°C
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13	2-14	2-15	2-16
3.31V	3.311V	3.31V	3.311V	3.31V	3.31V	3.309V	3.31V	3.31V	3.311V	3.31V	3.31V	3.31V	3.311V	3.31V	3.311V
26°C	26°C	26°C	25°C	25°C	26°C	25°C	26°C	25°C	25°C	25°C	25°C	25°C	25°C	26°C	26°C
3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8	3-9	3-10	3-11	3-12	3-13	3-14	3-15	3-16
3.311V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.311V	3.31V	3.31V	3.31V	3.31V	3.31V	3.311V	3.309V	3.31V
26°C	26°C	26°C	26°C	25°C	26°C	26°C	25°C	25°C	26°C	26°C	26°C	26°C	26°C	26°C	26°C
4-1	4-2	4-3	4-4	4-5	4-6	4-7	4-8	4-9	4-10	4-11	4-12	4-13	4-14	4-15	4-16

Figure 6-66 Cell data displayed in overview

## Histogram

In this mode, the cell voltage and temperature are displayed separately. You need to select a parameter, and then the search results will be displayed in bar chart.



Figure 6-67 Cell data displayed in histogram

## • Sheet

In this mode, the cell number, voltage, and temperature are displayed in a list. Information of 10 cells are displayed by default, and you can set the number of cells to be displayed per page to 10, 20, 30, 40 and 50, or directly enter the page number to go to a defined page.

Cell data display		🛄 Overview 🖬 Histogram 🔳 Sheet
No.	Voltage(V)	Temperature(°C)
1	3.311	26
2	3.312	26
3	3.311	26
4	3.312	26
5	3.31	26
6	3.311	26
7	3.31	26
8	3.311	26
9	3.31	26
10	3.311	26
		Total: 112 < 1 2 3 4 5 12 > 10 / Page > Goto

Figure 6-68 Cell data displayed in sheet

## 6.6.7 Air Conditioning

View information on the air conditioner, and manually turn on or off it.

## NOTICE!

Currently, there are two air conditioner models (LZXD-3.5GE and 2000KP) that are installed in different cabinet models, and their parameters are different.

## **Viewing Information**

Log in to the webpage, and then select **System overview > Energy Storage Photovoltaic/** Energy Storage > Cabinet > Air conditioning > Device details. • LZXD-3.5GE

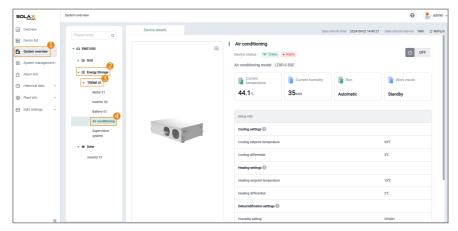


Figure 6-69 Information on LZXD-3.5GE air conditioner

Table 6-26 Parar	neter description on	LZXD-3.5GE air conditioner
------------------	----------------------	----------------------------

Data Type	Parameter	Description
Device info	Device status	Includes the online/offline status and operation status of the air conditioner
	Air conditioning model	Model of the air conditioner
Real-time info	Current temperature	Real-time ambient temperature inside the cabinet
	Current humidity	Real-time humidity inside the cabinet
Real-time info	Run	Operation mode of the air conditioner, including automatic, forced cooling, forced heating, forced air supply and forced standby
	Work mode	Real-time running status of the air confitioner, including cooling, heating, air supply and standby

Data Type	Parameter	Description
	Cooling settings	Includes the cooling point temperature and cooling return difference. The air conditioner will turn on cooling when the cabinet temperature exceeds their sum, and turn off cooling when the temperature falls below their difference. For example, you can set the cooling point temperature to 26°C, and the cooling return difference to 2°C, and then the air conditioner will turn on cooling when the cabinet temperature exceeds 28°C (26°C+2°C), and turn off cooling when the temperature falls below 24°C (26°C-2°C).
Setup info (Available only when the Run mode is	Heating settings	Includes the heating point temperature and heating return difference. The air conditioner will turn on heating when the cabinet temperature falls below the their difference, and turn off heating when the temperature exceeds their sum. For example, you can set the heating point temperature to 15°C, and the heating return difference to 2°C, and then the air conditioner will turn on heating when the cabinet temperature falls below 13°C (15°C-2°C), and turn off heating when the temperature exceeds 17°C (15°C+2°C).
Automatic)	Dehumidification settings	Includes humidity setting, humidity difference, humidity dead zone and dehumidification temperature. Dehumidification starts when both conditions are met: the cabinet temperature is at least 2°C higher than the dehumidification temperature, and the cabinet humidity is higher than the sum of the humidity setting value and humidity difference. Dehumidification stops when any of the conditions are met: The cabinet temperature is lower than the dehumidification temperature, or the cabinet humidity is lower then the sum of humidity setting value and humidity dead zone. For example, if you set these values respectively to 50%RH, 10%RH, 5%RH and 20°C, then humidification starts when the cabinet temperature exceeds 22°C (20°C+2°C) and humidity exceeds 60%RH (50%+10%), and humidification stops when the cabinet temperature is lower than 20°C, or the humidity is lower than 55%RH (50%+5%).

## • 2000KP

SOLAX	System overview	<u> </u>					٥	•	🧶 use
a) Overview	Please enter q	Device details			Data refresh t	time: 2024-05-28 09:38.03 Data	a refresh inten	ral: 1Min	2 Refrest
Device list				Air conditioning					
System overview	✓		0	Device status : 🗢 Online 🔹 Normal		M Setting	C	Power ON	
88 System management~	B Cabinet 001			Air conditioning model: 2000KP					
<u>首</u> Alarm info	Meter 01			Current temperature:		Current humidity:		-	
Historical data ~	10H15001030104			24.3 °C	61	50.9 sree			
Plant info v	Battery Rack 001- Battery1								
EMS settings 🗸 🗸	Air conditioning			Setup info					
	Supervision system								
				Cooling settings					
				Cooling point temperature		:	25°C		
				Cooling return difference			70		
				Heating settings 💮					
				Heating temperature			B <sup>I</sup> C		
				Heating return difference			10°C		

Figure 6-70 Information on 2000KP air conditioner

Table 6-27	Parameter	description	on 2000KP	air conditioner
------------	-----------	-------------	-----------	-----------------

Data Type	Parameter	Description
Device info	Device status	Includes the online/offline status and operation status of the air conditioner
Device info	Air conditioning model	Model of the air conditioner
Real-time	Current temperature	Real-time ambient temperature inside the cabinet
info	Current humidity	Real-time humidity inside the cabinet
	Cooling settings	Includes the cooling point temperature and cooling return difference. The air conditioner will turn on cooling when the cabinet temperature exceeds their sum, and turn off cooling when the temperature falls below their difference. For example, you can set the cooling point temperature to 25°C, and the cooling return difference to 7°C, and then the air conditioner will turn on cooling when the cabinet temperature exceeds 32°C (25°C+7°C), and turn off cooling when the temperature falls below 18°C (25°C-7°C).
Setup info	Heating settings	Includes the heating point temperature and heating return difference. The air conditioner will turn on heating when the cabinet temperature falls below the heating point temperature, and turn off heating when the temperature exceeds their sum. For example, you can set the heating point temperature to 8°C, and the heating return difference to 10°C, and then the air conditioner will turn on heating when the cabinet temperature falls below 8°C, and turn off heating when the temperature exceeds 18°C (8°C+10°C).

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## Turning on or off Air Conditioner

- Step 1: Log in to the webpage, and then select System overview > Energy Storage Photovoltaic/Energy Storage > Cabinet > Air Conditioner > Device details.
- Step 2: Click Power ON or Power OFF to turn on or off the air conditioner, and then click Ok on the confirmation pop-up.

SOLAX	System overview							admin 🚽
(J) Overview	Please enter Q	Device details			Data re	fresh time: 2024-09-02 14:46:22	Confirm to turn on this device?     Cancel     Cancel     Cancel	: Refresh
Device list     System overview     System management~	-> @ EMS1000 > @ Grid	C	t	Air conditioning Device status :   Coline Air conditioning model: LZX			() OFF	9
<u>许</u> Alarm info ④ Historical data ~	BE Energy Storage     TRENE 01			Current temperature	Current humidity	🗿 Run	Work mode	
Plant info ~	Meter 01 Inverter 02			<b>44.1</b> °c	35 <sub>NRH</sub>	Automatic	Standby	
EMS Settings V	Battery 01 Air conditioning			Setup info				
	Supervision system	30		Cooling settings @ Cooling setpoint temperature			30°C	- 1
	v 🦛 Solar Inverter 01			Cooling differential			5°C	
				Heating settings			15°C	-
				Heating differential			2°C	
				Dehumidification settings				

Figure 6-71 Turing on or off the air conditioner

## 6.6.8 Supervision System

You can check the status of the multiple monitoring devices in the cabinet, such as the water sensor, SPD, temperature sensor and more, and turn on or turn off the cabinet control devices. The supervision system ensures the entire energy system operates in a safe and normal environment.

## Viewing Supervision System Information

Log in to the webpage, and then select **System overview > Energy Storage Photovoltaic/** Energy Storage > Cabinet > Supervision system > Device details.

SOLAX	System overview					🕀  🚷 admin
(J) Overview	Please enter Q	Device details	History data		Data refresh time: 2025-01-20 10:02	12 Data refresh interval: 1Min 😄 Refresh
E Device list	- @ EM\$1000	Supervision system				
System overview		Device status : 🗢 Online • Non	mal			HI Setting
88 System management-	✓ tio Grid					
System pre-check	Grid Meter	Environmental status				
System settings $\sim$	- Energy Storage	Normal	Normal	8. Normal	CO	
Smart scene	TRENE 01	Water status	Door status	Temperature & Humidit	CO Sensor @	
<u> 在</u> Alarm info	Meter 01					
Historical data ~	Battery 01	Cabinet status				
Plant info ~	Air Conditioning	Normal	Normal	Normal	Normal	Normal
📼 EMS Settings 🗸 🗸	Supervision System	Main circuit	Emergency stop	Shutters	SPD Normal	Explosion-proof fan
		Fire status				
		Normal	2 Normal	<b>b</b> Normal		
		Smoke status	Aerosol status	Temperature status		



Parameter	Description
Device status	Includes the communication status of the supervision system with EMS1000, and the operation status of the entire system. Whatever component in the cabinet is abnormal, the system status displays <b>Alarm</b> .
Environmental status	<ul> <li>Whether the environmental status of the cabinet is normal, including water, door, temperature and humidity, and CO.</li> <li>Normal: No exception is detected</li> <li>Alarm: An exception occurs</li> </ul>
Cabinet status	<ul> <li>Includes the status of the main circuit breaker, emergency stop, shutters, SPD and explosion-proof fan. When the emergency stop is turned on, its status displays as Alarm; if it remains turned off, the status displays as Normal.</li> <li>Normal: The component is normal</li> <li>Alarm: The component is abnormal</li> </ul>
Fire status	<ul> <li>Includes the status of the smoke sensor, aerosol sensor and temperature sensor.</li> <li>Normal: The density of smoke and aerosol, and the temperature inside the cabinet remain in a normal range.</li> <li>Alarm: The density of smoke and aerosol, and temperature inside the cabinet are abnormal.</li> </ul>

## Setting Access Control Protection

Enable the function and set the duration that the cabinet door can be kept open to protect the system against potential risks. When the function is enabled, once the door is opened, the system will initiate a countdown warning, and then automatically shut down when the opening duration threshold is met.

## NOTICE!

This function is available only for the admin account.

- Step 1: Log in to the webpage, and then select System overview > Energy Storage Photovoltaic/Energy Storage > Cabinet > Supervision system > Setting.
- Step 1: On the setting pop-up, select Yes, set the Time duration, and then click Confirm.

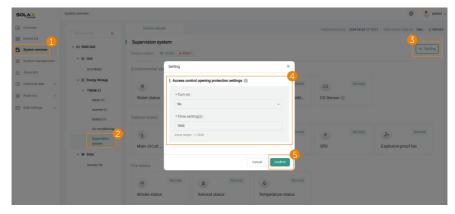


Figure 6-73 Setting access control protection

## **Viewing History Data**

View the historical temperature and humidity data inside the cabinet.

- Step 1: Log in to the webpage, and then select System overview > Energy Storage Photovoltaic/Energy Storage > Cabinet > Supervision system> History data.
- Step 2: Set the Time, and then click Check.

SOLAX	System overview	🕀 🔮 🔹	admin -
a Overview	Please enter a	Device details Dista refresh time: 2025-01-20 10:28:44 Data refresh interval: 1Min 🛫 F	Refresh
Device list     System overview	Please enter Q → EMS1000	Cabinet environment analysis	<b>7</b> 0
88 System management~	+ Bt Grid		
道 Alarm info	Grid Meter	X 984	
🕒 Historical data 🗸 🗸	TRENE 01		
Plant info ~	Meter 01		
EMS Settings V	Inverter 01	10 10	
	Battery 01	5 S O O	
	Air Conditioning	2025-01-14 2025-01-14 2025-01-15 2025-01-16 2025-01-16 2025-01-17 2025-01-17 2025-01-18 2025-01-18 2025-01-18 2025-01-19 2025-01-20	
	Supervision System	Temperature Humidity	

Figure 6-74 Viewing historical environmental data

#### **Related Operation**

Click **Export data** to export the historical power data to an Excel file.

## 6.6.9 External inverter

You can view the real-time data and history data of the external inverter. Operations are similar to those on the inverter in the cabinet. For details, see "6.6.5 Inverter".

# 6.7 System Management

Perform pre-check and set operation configurations for the system.

## 6.7.1 System Pre-check

System pre-check is to automatically check the online/offline and alarm status of all components in the system before putting it into use. This function can ensure the system be at an ideal status for use and reduce potential risks during operation.

- Step 1: Log in to the webpage, and then select System management > System precheck.
- Step 2: Select the checkbox of one or more cabinets, and then click Check.

The check results will be displayed on the upper-right corner after pre-check completes. The pre-check result displays as **Pre-check succeeded** only when all components of the system are online or normal. Otherwise, the result displays **Pre-check failed**.



Figure 6-75 Performing system pre-check

**Related Operations** 

• Viewing pre-check details

Click **Detail** to view the online/offline and alarm status of all components.

			Detail	×
Cabinet 001 AELIO-P50B100	Pre-ch	neck failed	Pre-check failed. Service unavailable.	Pre-check failed
	Detail IO ModuleSN: SOLAXPOWE		Communication check      Device     Air conditioning	Device status  Offline
	InverterSN: 10H1S0010301 BatterySN: 20D8YOA00000	· · · · · · · · · · · · · · · · · · ·	Inverter IO Module	Online     Online
_	Auto pre-check 😨		Temperature & Humidity sensor	Online     Online
			Battery	Online
E→ Export statistics			Grid meter	Online
L+ Export statistics			II Sensor alarm status	

Figure 6-76 Viewing pre-check details

• Auto pre-check

After it is enabled, the system will automatically check the status of all its components each time you power on EMS1000. If pre-check failed, the system will not operate and will remain standby to avoid operation exception. If it is disabled, the system will not perform pre-check automatically, and can continue operation even manual check failed.

System pre-check		
Cabinet 001 AELIO-P50B100		Pre-check failed
Export statistics	Detail 10 ModuleSN: SOLA InverterSN: 10H1S0 BatterySN: 20D8YO Auto pre-check @	01030104

Figure 6-77 Enabling auto pre-check

## 6.7.2 System Settings

Set the work mode, import settings, export settings and external control for the system.

## 6.7.2.1 Work Mode

For AELIO system, 6 work modes are supported, namely self-use, feed-in priority, back up mode, manual mode, peak shaving and TOU. For TRENE system, self-use, manual mode, peak shaving and TOU are available.

You can adjust the work mode of the system based on local situations to make full use of the PV energy and maximize the revenue.

## Self Use Mode

Select self-use mode where the feed-in subsidies are low and electricity price is high. You need to set a minimal battery SOC, select whether to charge form grid, and configure the periods for battery charging and discharging.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select self use from the drop-down list, and then click Run.
- Step 3: Set the parameters, and then click Save for the parameter to take effect.

SOLAX	System management > System settings > Work mode	(Q) 📵 🌏 admin -
(d) Overview	System work mode	
E Device list	Selfuse V Run	
System overview		
BB System management ~	I Mode parameter settings	
System pre-check	Min SOC (Value range:10-100)	
System settings	10 % Save	
Work mode	Charge from grid Save	
Parameter settin		
Import control Export control	Charge&Dischagre period 1	
Ripple control	Charge start time	Charge end time
当 Alarm info	60.00 © Save	08:00 © Save
() Historical data ~	Discharge start time	Discharge end time
Plant info ~	00.00 © Save	23:59 () Save
	ChargeLOschage period 2 tradile 5000	
	Charge start time	Charge end time
	09:13 O Save	22:00 Ø Save
	Discharge start time	Discharge end time

Enable Charge&Discharge period 2 for it to take effect.

Figure 6-78 Setting self-use mode

Parameter	Description
Min SOC	Minimal SOC for the battery to discharge.
Charge from grid	Whether to allow charging the battery from power grid when PV energy is not sufficient
Charge start time	Time that the battery starts charging
Charge end time	Time that the battery stops charging
Discharge start time	Time that the battery starts discharging
Discharge end time	Time that the battery stops discharging

Table 6-28 Self Use mode parameter description

#### **Feed-in Priority**

Select feed-in mode where the feed-in subsidies are high. You need to set a minimal battery SOC and a charge cutoff SOC, and configure the periods for battery charging and discharging.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select Feedin priority from the drop-down list, and then click Run.
- **Step 3:** Set the parameters, and then click **Save** for the parameter to take effect.

Enable Charge&Discharge period 2 for it to take effect.

SOLAX	System management > System settlings > Work mode	🕼 🕒 👌 admin -
J Overview	System work mode	
B Device list	Feedin priority v Run	
E System overview		
88 System management-	Mode parameter settings	
System pre-check	Min SOC (Value range:10-100) Charge cutoff SOC (Value range:10-100)	
System settings	19 % Save 90	% Save
Work mode	Charget/Discharge period 1	
Parameter settin	Charge start time Charge end time	
Export control	00:00 00 Save 08:00	0 Save
Ripple control	Discharge start time Discharge end time	
查 Alarm info	09:00 0 Same 23:59	() Save
Historical data      Hant info	Chargelizidesbage period 2 Enable Sever	
EMS settings v		
en ewa semiga 🗸	Charge start time Charge end time	
	09:13 0 Save 22:00	() Save
	Discharge start time Discharge end time	
	01:00 (9) Save (08:29	@ Save

Figure 6-79 Setting feed-in priority mode

Parameter	Description
Min SOC	Minimal SOC for the battery to discharge
Charge cutoff SOC	Battery SOC that can be charged from grid
Charge start time	Time that the battery starts charging
Charge end time	Time that the battery stops charging
Discharge start time	Time that the battery starts discharging
Discharge end time	Time that the battery stops discharging

#### Table 6-29 Feed-in Priority mode parameter description

#### Backup Mode

Select backup mode where power outage occurs frequently. Under this mode, the battery SOC remains at a relatively high level. You need to set a minimal battery SOC and a charge cutoff SOC, and configure the periods for battery charging and discharging.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select Back up mode from the drop-down list, and then click Run.
- **Step 3:** Set the parameters, and then click **Save** for the parameter to take effect.

Enable Charge&Discharge period 2 for it to take effect.

SOLAX	System management + System settings + Work mode	Q* 🕀 🚷 admin
Overview	System work mode	
E Device list	Back up mode v Run	
System overview		
88 System management	I Mode parameter settings	
System pre-check	Min SOC (Value range:15-100) Charge cutoff SOC (	value range:30-100)
System settings	15 % Save 50	% Save
Parameter settin	Charge&Dischagre period 1	
Import control	Charge start time Charge end time	
Export control	00:00 × Save 08:00	(9) Save
Ripple control	Discharge start time Discharge end time	
<u> </u>	09.00 © Save 23.59	(9 Save
🕑 Historical data 🗸 🗸	Charge&Dischagre period 2	
Plant info ~	Enable Save	
EMS settings ~		
	Charge start time Charge and time	
	09:13 © Save 22:00	© Save
	Discharge start time Discharge end time	
	01:00 Save 08:29	(9 Save
7		

Parameter	Description
Min SOC	Minimal SOC for the battery to discharge
Charge cutoff SOC	Battery SOC that can be charged from grid
Charge start time	Time that the battery starts charging
Charge end time	Time that the battery stops charging
Discharge start time	Time that the battery starts discharging
Discharge end time	Time that the battery stops discharging

#### Table 6-30 Backup mode parameter description

#### **Peak Shaving Mode**

Select peak shaving mode when you need to level out peaks in electricity use. You need to set the periods and threshold for discharging, and select whether to allow charge from gird, and other parameters.

#### NOTICE!

For TRENE system, the parameter value shall meet the requirement: Import limit (set in "Import Settings") > peak shaving threshold > peaking shaving grid power limit.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select Peak Shaving from the drop-down list, and then click Run.
- **Step 3:** Set the parameters, and then click **Save** for the parameter to take effect.

SOLAX	System management > System settings > Work mode	(Q* 📵 🛛 🐮 admin
Power	System work mode	
Overview		
E Device list	Peak sharing v Run	
System overview	Mode parameter settings	
System management-	Discharge period1	
System pre-check	Start time End time	
System settings	08:15 Ø Save 177:00	() Save
Work mode 6	Threshold (Value range 0-600000)	
Parameter settin	1000 W Save	
Import control		
Export control	Discharge period 2	
Ripple control	Start time End time	
首 Alerminfo	16.00 Ø Save 23.08	O Save
🕒 Historical data 🗸 🗸	Threshold (Value range 9-600000)	
Plant info ~	5000 W Save	
EMS settings ∨	Charge from grid	
	Enable Save	
	Charge power limit (Value range:0-600000) Max SOC (Value range:10-100)	
	300 W Save 90	% Save
a	Reserved SDC (Value range:10.100)	

#### Figure 6-81 Setting peak shaving mode

#### Table 6-31 Peak shaving mode parameter description

Parameter	Description
Start time	Time that the battery starts discharging
End time	Time that the battery stops discharging
Threshold	Max amount of power that the battery can discharge
Charge from grid	Whether to allow charging the battery from grid
Charge power limit	Max power that can be charged into the battery
Max SOC	Max battery SOC
Reserved SOC	The lower limit of battery SOC required for later peak shaving period.

## Manual Mode

Under manual mode, you can force the system to charge the battery, force the battery to discharge or stop charging and discharging.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select Manual mode from the drop-down list, and then click Run.
- **Step 3:** Select the operation from the drop-down list for the system, and then click **Save**.

SOLAX	System management > System settings > Work mode	•	🗶 admin
Overview     Device list     System overview	System work mode		
System management	Mode parameter settings		
System pre-check System settings	Manual mode Forest dwappy V Save		
Import settings Export settings	Charge/Discharge mode:		
External control Smart scene	Charge     Charge     0     Charge     0     Charge     0     Charge     0     Charge     0     Charge     Charge		
C Historical data ~			
<ul> <li>Plant info ~</li> <li>EMS Settings ~</li> </ul>			

For Forced charging and Forced discharging, Charge/Discharge power and Target SOC are required.

Figure 6-82 Setting Manual mode

## TOU

Configure strategies and templates for the system to automatically perform operations based on preset schedules.

- Step 1: Log in to the webpage, and then select System management > System settings > Work mode.
- Step 2: Under System work mode, select Manual mode from the drop-down list, and then click Run.
- Step 3: Set Template configuration and Strategy configuration.

SOLAX	System management > System settings > Work mode		Q 🕀 😍 admin -
(d) Overview	System work mode	•	
E Device list	TOU	Run	
System overview			
8 System management-	Mode parameter settings		
System pre-check	Plan preview 2024-05-28	Strategy configuration Template configuration	
Work mode 6	strategy1 ^	10 x 10u x 10u1 x 123 x +	
Import control	Template name: tou1		
Export control Ripple control	Self use 03:30-10:30	Template type: TOU Template status: Unbound	
Alarm info	Discharge 10:30-11:00	Template name: Minimum battery SOC(%):	
Historical data ~	Charge 11:00-11:30	10 20	
B Plant info v	Battery off 11:30-12:00	Start time End time Mode selection Setting items	
B Parcino v	Discharge 12:00-12:30		
EMS settings ~	Self use 12:30-13:00	00.00 01:30 O Battery off ~ /	
	Charge 13:00-16:30	01:30 02:30 0 Self use ~ Self use minimum SOC 30 3p	
	Discharge 16:30-19:30	01:30 02:30 0 Self use ~ Self use minimum SOC 30 %	
	Peak shaving 19:30-24:00	02:30 03:00 0 Peak shaving ~ Threshold 10 kW	
	More	03:00 04:30 0 Charge ~ Allow charging from grid Charge cutoff 50	% SOC
3			-

Figure 6-83 Setting TOU mode

## • Setting Template Configuration

A template defines the specific working mode that the system should follow within a specific period, and the related parameters in the working modes.

#### Step 1: Under Mode parameter settings, click Template configuration.

Step 2: Configure parameters for the template, and then click Confirm.

There is a default template format for you to enter specific information, and you can click + to configure more templates.

iguration		Template configurati	ion							
× +										
Tamal										
	ale status			* Minimun	n battery :	SOC(%):				
				Please er	nter					
End time		Mode selection	Setting items							
		Self use v	Self use minim	um SOC	Please e		%			
		Battery off v	7							
		Peak shaving ~	Threshold P	lease enter		kW				
04:00		Charge ~	Allow charging	from grid	Char	ge cutoff	Please	e enter	% 5	:0C
24:00	O	Discharge v	Discharge pow	er Pleas	e enter	%	~	Discharge cu	utoff	Please enter
	x + +	x + TOU Template status 2: End time 01:00 02:00 0 03:00 0	x + TOU Template status: - x End time Mode selection 01:00 Self use  C2:00 Battery off  C2:00 Battery off  C2:00 Peak shaving  C2:00 Peak shaving	x +					* + FOUL Template status: - Set use - End time Mode selection Setfug items O1:00 O Setf use - Setf use minimum SOC Please enter % O2:00 O Battery off - / O2:00 O Peak shaving - Threshold Please enter KW O4:00 O Charge - O Allow charging from grid Charge cutoff Please enter	x       +         FOUL Template status: -       -         Set in the status: -       + Minimum battery SOC(%):         Please enter       Please enter         End time       Mode selection       Setting items         01.00       Setf use       Setf use minimum SOC         02.00       Battery off ~       /         02.00       Battery off ~       /         03.00       Peak shaving ~       Threshold         Please enter       KW         04.00       Charge ~       Allow charging from grid         Charge ~       Allow charging from grid       Charge cutoff

Figure 6-84 Configuring templates

Table 6-32 Template parameter description

Parameter	Value Range	Description
Template type	TOU	Currently, only TOU template is available.
		Default value when a template is being created
Template status	Unbound	The template is created but not bound to any strategy.
	Bound Up	The template is bound to one or more strategies.
Template Name	/	Set a name for the template.

Parameter	Value Range	Description
Minimum battery SOC	10~100	Lowest battery SOC for the template to take effect.
Start time	/	Time duration that the battery cluster charges,
End time	/	<ul> <li>discharges or remains standby. The minimal time interval is 30 minutes.</li> </ul>
	Self-use	See "Self Use Mode"
Mode selection	Battery off	Keep the battery standby
	Peak shaving	See "Peak Shaving Mode"
	Charge	Charge the battery
Mode selection	Discharge	The battery discharges to supply power for the system

• Setting Strategy Configuration

Step 1: Under Mode parameter settings, click Strategy configuration.

**Step 2:** Configure parameters for the strategy, and then click **Confirm**.

There is a default strategy format for you to enter specific information, and you can click + to configure more strategies. Up to 20 strategies can be added.

Strategy configuration Template	configuration	
Strategy1 × +		
Strategy status: -		
*Strategy name:	* Strategy template:	* Priority:
Please enter	Please choose ~	Please choose
* Cycle mode:	*Time select:	
Please choose 🗸	2024-05-28 - 2024-07-13	
★Period select: Monday Tuesday Wednesday Thur	sday 🗌 Friday 🗌 Saturday 🔲 Sunday	
	, _ ,	
		Confirm Cancel

Figure 6-85 Configuring strategy

Parameter	Value Range	Description
		Default value when a new strategy is being created
Strategy State	Not Applied	The strategy is created but not applied.
	Applied	The strategy has been applied.
Strategy name	/	Set a name for the strategy
Strategy template	/	Select a template that you created in the previous step for the strategy.
Priority	1-20	Priority of the current strategy when the execution time of multiple strategies overlaps. 1 stands for top priority, and 20 the least priority.
	Repeat Weekly	Repeat the strategy by week
Cycle Mode	Repeat Daily	Repeat the strategy by day
Time Select	/	Start date and end date that the strategy takes effect after being applied.
Period Select		This parameter is required only when <b>Cycle Mode</b> is set to <b>Repeat Weekly</b> . You can select the specific data in a week that the strategy will take effect.

## Table 6-33 Strategy parameters

**Related Operation** 

Click **Editing** to modify the strategy that has been created.

## Step 3: Click Apply.

The strategy will be applied to the plan, and the **Strategy status** changes from **Not Applied** to **Applied**. You can click **Stop** to cancel the application.

Strategy Configuration Temp	olate Configuration		
Strategy01 × +			
Strategy State: Not Applied			
Strategy Name :	Strategy Template :		
Strategy01	TESTOI		
Priority :	Cycle Mode :		
1	Repeat Day		
Time Select :			
2024-03-09 - 2024-04-01	8		
		Apply	Editing

Figure 6-86 Applying the strategy

## **Viewing Plans**

The strategy that takes effect on the day will be displayed on **Plan preview**, including the strategy and template that are carried out and the specific operation to be performed in each period. You can click **More** to view the plans on a monthly basis, and check the details of settings for the periods.

Plan preview	n preview 2024-05-2	
DEMO	^	
Template name: demo		
Self use	00:00-01:00	
Battery off	01:00-02:00	
Peak shaving	02:00-03:00	
Charge	03:00-04:00	
Discharge	04:00-20:30	
Charge	20:30-24:00	

Figure 6-87 Viewing plans

## 6.7.2.2 Remote Settings

Set parameters for the inverter remotely on EMS1000 webpage.



- Step 2: Select the inverter SN, and then click Confirm.
- Step 3: Enter the password, click Ok, and then continue the configurations.

SOLAX	System management >	<ul> <li>System settings &gt; Remote settings</li> </ul>		Ð	🧶 admin
Overview     Device list	Inverter SN:	20240710000000	v Coolina 🗛		
System overview					
86 System management-					
System pre-check 2					
Work mode 3			Please enter the remote setting password ×		
Remote settings			Password 5		
Export settings External control					
立 Alarm info			Cancel Contra		
Historical data					
Plant info					
EMS Settings ~					

Figure 6-88 Configuring parameter setting

## 6.7.2.3 Import Settings

Set a maximum power value that the system can import from the grid to keep the expenses on power in control. When the total power that the system consumed from the grid reaches the value, the system cut off power supply from the grid.

- AELIO system
- Step 1: Log in to the webpage, and then select System management > System settings > Import settings.

SOLAX	System management > System settlings > Import settlings	🕀 😍 admin
al Overview	Import control	
B Device list	Enable 4	
System overview		
System pre-check System settings	+import line 30 KW	
Work mode		6
Remote settings	Reset	Save
Export settings External control		
Smart scene		
並 Alarminfo		
🕒 Historical data 🗸 🗸		
Plant info ~		
EMS Settings ~		

Step 2: Enable the function, set Import limit, and then click Save.

Figure 6-89 Setting import control for AELIO system

## TRENE system

Step 1: Log in to the webpage, and then select System management > System settings > Import settings.

SOLAX	System management × System settings × Import settings	🕀 😍 admin
d Overview	Import control	
B Device list		
System overview	Enable:	
System management-		
System pre-check	Control mode:	
System settings	Reduce battery charge power and discharge battery if necessary v	
Work mode	Import limit:	
Import settings	40 KW	
Export settings External control		
Smart scene	Reset	Save
查 Alarm info		
🕑 Historical data 🗸 🗸		
Plant info ~		
🖶 EMS Settings 🗸 🗸		

Step 2: Enable the function, set the Control mode and Import limit, and then click Save.

Figure 6-90 Setting import control for TRENE system

**Related Operation** 

Click **Reset** to clear the settings.

## 6.7.2.4 Export Settings

Set a maximum power value that the system can export to the grid. When the total power or power per phase that the system delivers to the grid reaches the limit value, the system stops exporting power to the gird. This is ideal for use in countries and regions with gird-connection export control.

- Step 1: Log in to the webpage, and then select System management > System settings > Export settings.
- **Step 2:** Enable the function, select the control mode, set the export limit value, and then click **Save**.

SOLAX	System management > System settings > Diport settings	ə 🔰 admin
(J) Overview	Export control	
B Device list		
System overview		
SS System management~	Control mode:	
System pre-check System settings	Total	
Work mode	+Eportimit 10 kw v	
Remote settings		
Export settings	Reset	5ave
<u>许</u> Alarm info		
🕒 Historical data 🗸 🗸		
Plant info ~		
🖶 EMS Settings 🗸 🗸		

Figure 6-91 Setting export control

Parameter	Value Range	Description
Control	Total	The sum of power exported to the gird from all phases cannot exceed the limit
mode	Per phase	The power exported to the grid from each phase cannot exceed the limit
	%	Control the export power value by the percentage of the inverter power rate
Export limit	kW	Control the export power value by specific power amount

#### Table 6-34 Export control parameter description

**Related Operation** 

Click Reset to clear the settings.

## 6.7.2.5 External Control

EMS1000 offers 4 DI channels and 16 combination options for ripple control. You can enable the combinations and set control items for the system, such as shutting down the inverter, setting input and output power limit and more. Ripple control takes effect for the entire system, and has priority over other system settings.

## NOTICE!

The setting items take effect only when the system receives corresponding ripple control signals.

- Step 1: Log in to the webpage, and then select System management > System settings > External control.
- **Step 2:** Click on the confirmation pop-up.
- **Step 3:** Enable the DI combination option, select the control item, and then set the related parameters.

so		SI	istem man	agement >	System se	ttings ≻ Ex	ternal control				e 🐉	ıdmin 🦂
	Overview		Exter	nal Cont	Irol			you want to turn on				
8	Device list					on has the	highest p	is control mode? 4. ed functions.				
•	System overview	1	Contro	Imode								
86	System management-		Ripple	Control			~	() Closed				
	System pre-check		DI1	DI2	DI3	D14	Enable switch	Control selection		Setting items		
	System settings	~						6				
	Work mode							Please choose	×	Active power percentage Please enter %		
	Remote settings											
	Export settings		0					Please choose	~	Active power percentage Please enter %		
	External control	5										
道	Alarm info			0				Please choose	v	Active power percentage Please enter %		
G	Historical data											
۲	Plant info				0			Please choose	~	Active power percentage Please enter %		
8	EMS Settings											
					0	0		Please choose	~	Active power percentage Please enter %		

Figure 6-92 Setting ripple control

## Table 6-36 Alarm information description

Parameter	Description
Inverter output active power limitation	Ratio of the inverter active power that can feed in to the grid
Inverter input active power limitation	Ratio of the inverter active power that can be imported from the grid
Inverter output reactive power limitation	Set the power factor, and the reactive mode, either leading or lagging.
Inverter grid-tied power limitation	Ratio of grid-tied power output; used for zero output
Inverter shutdown	Shut down the inverter

## 6.7.3 Smart Scene

Set conditions and actions relating to time, weather and electricity price for the system to automatically execute defined operations under certain circumstances, or directly apply the recommended scenes that we have already configured in the system to maximize your revenue.

## 6.7.3.1 Recommended Scenes

Currently, we have configured 1 recommended smart scene for TRENE system, and 2 recommended smart scenes for AELIO system. The recommended smart scenes offer optimized revenue solutions when the electricity is negative.

TRENE

When the selling price of electricity is negative, the system stops feeding in power to the gird. In this scene, export control mode is on, and the power limit is set to 0% for each phase.

**Step 1:** Log in to the webpage, and then select **System management > Smart scene**.

## Step 2: Click Recommendation, and then click Apply.

After applying the recommended, scene, it will be automatically added to **My scene**, and you can continue to edit the scene as needed.



Figure 6-93 Applying recommended scene for TRENE

AELIO

Two solutions are available, respectively suitable for negative sale price and negative purchase price. When the purchase price is negative, the PV power is set to 0, and the system buys electricity from the gird to charge the battery; when the sale price is negative, the system stops feeding power to the grid.

**Step 1:** Log in to the webpage, and then select **System management > Smart scene**.

## Step 2: Click Recommendation, and then click Apply.

After applying the recommended, scene, it will be automatically added to **My scene**, and you can continue to edit the scene as needed.

SOLAX	System management > Smart scene	🕀  😍 admin -
a Overview	Recommendation My scenes	
E Device list	Recommended scenes	
System overview		
B System management-	2 Price optimization	
System pre-check System settings	O Optimization of the revenue from ne	
Smart scene	When the electricity purchase price is negative, adjust t     When the electricity selling price is negative, adjust the	
首 Alarm info	IF condition Import: Electricity price is less than 0/kWh Export: Electricity price is less than 0/kWh	
🕒 Historical data 🗸	THEN action THEN action	
Plant info ~	System PV power target is 0KW. Battery power target is-60KW. System Export_control ON, the mode is Per phase, the value is action: 0%	
📼 EMS Settings 🗸 🗸		
	4	
	Asphy Asphy	

Figure 6-94 Applying recommended scene for AELIO

## 6.7.3.2 My Scenes

Create and view smart scenes. Up to 20 smarts scenes can be created.

Step 1: Log in to the webpage, and then select System management > Smart scene > My Scenes.

SOLAX	System management > Smart scene		🕀 🙎 admin
Overview	Recommendation My scenes		
Device list	My scenes		+ Add scene
System overview  System management	💿 aaab 🕥 🖸	Optimization of the revenue from ne	💿 testttt
System pre-check System settings ~ Smart scene X Alem info	IF condition Import: Lower than the highest electricity price by 123.5 Export: Lower than the highest electricity price by 5.5% THPM action System action: Export_control off	IF condition Export: Electricity price is less than 0V/XWh THEN action System action: Export_control 0N, the mode is Per phase, the v_	IF condition Time 18.24.0 nce Import: During the period from 03.00 to 0515, the 2h wil. THEM section System action: Export_control ON, the mode is Per phase, the v
🕑 Historical data 🗸 🗸	system action: export_control on		System action, capin control on, the mode is net prison, the v-
Plant info ~			
EMS Settings ~			© 🛛 🔅

Figure 6-95 Creating a smart scene

- **Step 2:** Click **+ Add Scene**, and then enter the scene name.
- Step 3: On IF condition, select Meet all conditions or Meet any of the conditions, set the detailed parameters for selling and buying electricity price, and then click **Save**.

Table 6-37 If condition pa	rameters description
----------------------------	----------------------

Category	Parameter	Description
	Meet all conditions	Only when all conditions specified in IF condition are met will the smart scene take effect.
/	Meet any of the conditions	As long as any of the conditions specified in IF condition is met, the smart scene will take effect.

## Webpage Operations

Category	Parameter	Description
Trigger time	/	Set the specific time and frequency for the smart scene to take effect.
Weather	/	Set the amount and duration of irradiance, temperature, humidity, wind speed, air pressure, raining or not, and expected raining or not. The weather data will be displayed in a line graph.
Electricity price	Import	Set the electricity price threshold, difference from the highest electricity price, and the time and duration with
	Export	the highest electricity price. The electricity price data will be displayed in a line graph.

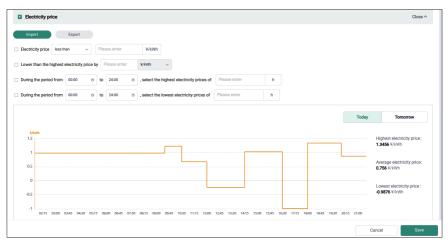


Figure 6-96 Setting IF condition for smart scene

# Step 4: Click THEN action, set System action and EMS1000 parameters, and then click Save.

## Table 6-38 Then action parameters description

Category	Description
System action	Includes export settings, import settings and work mode. For AELIO system, system switch on/off is also available.
EMS1000	Select DO No. and output level for EMS1000 to perform related operations.

IF condition	THEN action			
System action				Close ^
Export Settings No	*			
Import Settings No	~			
Work mode     Manual mode	- O Parameter settings			
EMS1000				Close ^
DO Signal 🛞 Parameter :	settings			
			Cancel	Save

Figure 6-97 Setting Then action for smart scene

# 6.8 Alarm Information

Alarms from all devices that EMS1000 manages are displayed here in a reverse order by the time that the alarm occurred. 10 alarms are displayed per page by default, and you can set this number to 20, 30, 40 and 50, or directly enter the page number to go to a specific page.

## 6.8.1 Viewing Alarms

Alarm information includes the device type and SN, alarm name, error code, alarm level, time that the alarm occurs and ends, alarm status and more.

Log in to the webpa	ge, and then	select Alarm info.
---------------------	--------------	--------------------

Alarn	n list										
	No.	Device type	SN	Alarm name	Error code	Alarm level	Alarm time	End time	Alarm status	Operatio	n
	1	Cabinet	Aelio01	EMS and air conditioning communication failure	1	Notice	2024-06-04 11:44:15		철 Pending	Detail	
	2	Cabinet	Aelio01	EMS and CO detector communication failure	1	Notice	2024-06-21 08:43:52	2024-06-21 08:43:56	Resolved	Detail	Delete
	3	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 08:29:19	2024-06-21 08:29:23	Resolved	Detail	Delete
	4	Cabinet	Aelio01	EMS and CO detector communication failure	1	Notice	2024-06-21 08:27:02	2024-06-21 08:27:06	Resolved	Detail	Delete
	5	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 06:07:43	2024-06-21 06:07:47	Resolved	Detail	Delete
	6	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 04:17:04	2024-06-21 04:17:08	Resolved	Detail	Delete
	7	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 04:05:24	2024-06-21 04:05:28	Resolved	Detail	Delete
	8	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 03:06:01	2024-06-21 03:06:05	Resolved	Detail	Delete
	9	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 02:34:21	2024-06-21 02:34:25	Resolved	Detail	Delete
	10	Cabinet	Aelio01	EMS and CO detector communication failure	/	Notice	2024-06-21 00:11:04	2024-06-21 00:11:08	Resolved	Detail	Delete
							Total: 264 <	1 2 3 4 5	··· 27 > 1	0 / Page	Goto

Figure 6-98 Viewing alarm information

Parameter	Description
Device type	The device with which the alarm occurs
SN	SN of the alarm device
Alarm name	Brief description of the alarm
Error code	Only available for inverter errors
Alarm level	Emergency urgency level of the alarm, divided into critical, warning and notice
Alarm time	Time that the alarm occurs
End time	Time that the alarm is resolved
Alarm status	<ul><li>Pending: Alarms that are not resolved yet</li><li>Resolved: Alarms that have been resolved</li></ul>

#### Table 6-39 Alarm information description

You can click **Detail** under **Operation** on each alarm to view more details on the alarm, and the possible causes and suggestions that we offer for each type of alarm. This helps you to solve the problem quickly and efficiently.

Alarm details	x
Device model AELIO-P50B100	Alarm type Cabinet failure
Alarm details: EMS and CO detector communication failure	
Causes:	
✓ Suggestions: 1. Check If the connection between RS-485-2(A2, B2) of IO module and whether the communication of the device is normal through EMS or of a 2. Check If the cosmo is supplied with power, if not plasses reviere it. 3. Check If the communication line of the CO sensor is normal. PIN term terminal 3, 24V- for PIN terminal 8). If I is not working properly, please Colors: PIN terminal 1: crange white, PIN terminal 2. orange; PIN terminal terminal 8; brown	oud after wiring. ninal 1,4 is to 485A and PIN terminal 2,5 for 485B. (24V+for PIN connect the wires again.

Figure 6-99 Alarm details

## 6.8.2 Deleting Alarms

Resolved alarms can be deleted one by one or in batches.

• Deleting alarms one by one

**Step 1:** Log in to the webpage, and then click **Alarm info**.

Step 2: Under Alarm list, click Delete on the alarm that you want to delete, and then click Delete on the confirmation pop-up.

	Alar	m info								(.	o' 🕀  💲 :
Overview     Device list     System overview			i levet: i time:		v nd date	Alarm status: Picase choose	Device type			Q. Search	Reset
System management~	1	Alar	m list								
Historical data ^			NO.	Device type	SN	Alarm name Error code	Alarm level	Alarm time	End time	Alarm status	Operation
Power curve			1	Cabinet	Aelio01	EM Delete	×	2024-05-28 19:28:26		g Pending	Detail
Plant info ~			2	Supervision system	SOLAXPOWER.LTD	Em		2024-05-22 15:01:34		2 Pending	Detail
EMS settings 🔍 🗸			3	Supervision system	SOLAXPOWER.LTD	Are you sure you want to delete this alarm??		2024-05-17 14:41:06		설 Pending	Detail
			4	Supervision system	SOLAXPOWER.LTD	SP Cancel Delete		2024-05-17 14:41:06		± Pending	Detail
			5	Cabinet	Aelio01	EMS and air conditioning communication failure /	Notice	2024-05-29 09:21:54	2024-05-29 09:21:58	Resolved	Detail Delete
			6	Cabinet	Aelio01	EMS and CO detector communication failure /	Notice	2024-05-29 08:36:45	2024-05-29 08:36:49	Resolved	Detail Delete
			7	Cabinet	Aelio01	EMS and CO detector communication failure /	Notice	2024-05-29 07:17:04	2024-05-29 07:17:08	Resolved	Detail Delete
			8	Cabinet	Aelio01	EMS and CO detector communication failure /	Notice	2024-05-29 06:23:35	2024-05-29 06:23:39	Resolved	Detail Delete
			0	Cabinet	Aelio01	EMS and air conditioning communication failure /	Notice	2024-05-29 06:21:36	2024-05-29 06:21:37	Resolved	Detail Delete
			10	Cabinet	Aelio01	EMS and air conditioning communication failure /	Notice	2024-05-29 06:19:07	2024-05-29 06:19:12	@ Resolved	Detail Delete

Figure 6-100 Deleting an alarm

- Deleting alarms in batches
- Step 1: Log in to the webpage, and then click Alarm info.
- Step 2: Select the checkbox in the front of the resolved alarms that you want to delete, click **Batch delete**, and then click **Delete** on the confirmation pop-up.

You can also select the checkbox on the head of the alarm list to select all resolved alarms, and then delete all these resolved alarms in batches.

SOLAX		Alarr	n info											0.0	🧶 admin -
J Overview			Alarm	levet			Alarm stat	us: Please choose		Device type					
Device list     System overview			Alarm	time:		id date 🛛 🖴							Q Search	Reset	
SS System managemen	nt~		Alarr	n lint										<b>6</b>	_
並 Alarm info		1	Alan	niist										Batch	defete
() Historical data			•	NO.	Device type	SN	Alarm name		Error code	Alarm level	Alarm time	End time	Alarm status	Operation	
Power curve Inverter curve				1	Cabinet	Aelio01	EM 0 D	slete		×	2024-05-28 19:28:26		g Pending	Detail	
Plant info				2	Supervision system	SOLAXPOWER.LTD	Em				2024-05-22 15:01:34		ü Pending	Detail	
EMS settings				3	Supervision system	SOLAXPOWER.LTD	Ent	Are you sure you want to delete th	e selected alarn	ns??	2024-05-17 14:41:06		d Pending	Detail	
				4	Supervision system	SOLAXPOWER.LTD	SPI	Cancel	ete		2024-05-17 14:41:06		g Pending	Detail	
				5	Cabinet	Aelio01	EMS and air	conditioning communication failure		Notice	2024-05-29 09:21:54	2024-05-29 09:21:58	Resolved	Detail Delet	te .
				6	Cabinet	Aelio01	EMS and CO	detector communication failure		Notice	2024-05-29-08:36:45	2024-05-29 08:36:49	Resolved	Detail Delet	ñe .
				7	Cabinet	Aelio01	EMS and CO	detector communication failure		Notice	2024-05-29 07:17:04	2024-05-29 07:17:08	Resolved	Detail Dele	de .
				8	Cabinet	Aelio01	EMS and CO	detector communication failure		Notice	2024-05-29 06:23:35	2024-05-29 06:23:39	Resolved	Detail Delet	de .
				9	Cabinet	Aelio01	EMS and air	conditioning communication failure		Notice	2024 05:29 06:21:36	2024-05-29-06:21:37	@ Resolved	Detail Dele	ne -
				10	Cabinet	Aelio01	EMS and air	conditioning communication failure		Notice	2024-05-29-06:19:07	2024-05-29 06:19:12	Resolved	Detail Dele	te .

Figure 6-101 Deleting alarms in batches

## 6.8.3 Searching for Alarms

You can search for alarms by alarm level, alarm status, device type and alarm time. The search results will be displayed in the list below.

Log in to the webpage, click **Alarm info**, set the search conditions, and then click **Search**.

SOLAX	Ala	rm Information									🕒 🔳 use
Data Overview Device List System Overview	2	Alarm Level Alarm Time:		ie v - End date 🗎	Alarm Status:	Please Choose	*	Device Type: Bettery	•	Q Search	Reset
	1	Alarm List	Device Type	Device SN No	Alarm Name	Error Code	Alarm Level	Occurrence Time	End Time	Alarm Status	Operation
Station Information ~			Battery	2008Y0A111111	Fan malfunction	39	Status Notifications	2024-03-06 19:10:35	2024-03-06 19:29:58	Finished	Detail
EMS Settings V			Battery Battery	20D8Y0A1111111 20D8Y0A1111111	Fan malfunction VoltSensorFlt2	39 25	Status Notifications Emergencey Alarm	2024-03-06-08:27:03	2024-03-06 09:37:14 2024-02-19 15:44:02	<ul><li>Finished</li><li>Finished</li></ul>	Detail
		4	Battery	2008Y0A1111111	BIT Fault	35	Emergencey Alarm	2024-02-19 15:33:09	2024-02-19 15:44:02 Total: 4	⊘ Finished	Detail

Figure 6-102 Searching for alarms

**Related Operation** 

Click **Reset** to clear the search conditions.

# 6.9 Historical Data

View the system operation data of a specific time in the past in line chart, including the power curve of the entire system, and the phase voltage, current, active power and more of the inverter.

## 6.9.1 Power Curve

The line chart displays 4 types of system power data in 4 lines of different colors, namely grid power, load power, energy power and PV power. You can view the data globally through the line chart, and hover the mouse on the chart to view the detailed information of a moment.

**Step 1:** Log in to the webpage, and then select **Historical data** > **Power curve**.

Step 2: Set the Time, and then click Check.

The maximum time interval is 7 days.

SOLAX	Historical data > Power carre 🗘 🗘 edmin
a Overview	Powercurve
E Device list	
System overview	3         Time: 20240520         20240520         Eport data
BB System management~	
<u> 沿</u> Alarm info	Power (kW) s
Historical data	
Power curve	······································
Inverter curve	
Plant info ~	
🖶 EMS settings 🗸 🗸	3
	■ Grid power ■ Load power ■ Battery power ■ Vy power

Figure 6-103 Viewing power curve

**Related Operation** 

Click **Export data** to export the historical power data to an Excel file, in which these data will be displayed in a list with an interval of 10 seconds.

## 6.9.2 Inverter Curve

The system displays 4 types of data on the inverter: AC phase voltage, AC phase current, temperature and active power. You can select to simply view these data of a day in line chart, or compare these data between the selected day and its previous day.

- **Step 1:** Log in to the webpage, and then select **Historical data > Inverter curve**.
- Step 2: Select Contrast or Overview as the display mode, set the Time, select SN from the drop-down list, and then click Check.
  - » Contrast mode

Only 1 day can be selected, and the system will display the related data of this day and its previous day in the line chart.

SOLAX	Historial data > Inverter carve 🕀 😍 data
Overview	I Inverter curve
<ul> <li>Device list</li> <li>System overview</li> </ul>	Time: 222406/9 B SN: X0000046011310 V
B System management-	AC Phase Voltage (V)
1 Alam into	1
Historical data     A     Power curve	05
Invester curve	0.4
Voltage analysis	02
Current analysis Temperature ana	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
SOC Analysis	
Backward batter.	AC Phase Current (A)
EMS Settings ~	0.8

Figure 6-104 Viewing inverter curve in contrast mode

» Overview mode

A time period can be selected, and the system will display the data within the period in the line chart. You can click **Export data** to export the data to an Excel file.

SOLAX	Historical data + Inverter conve	\varTheta 👌 admin
@ Overview	Inverter curve	
E Device list	Time: 2024/09/23 - 2024/09/29 El SN: X3GG60H9511010 - Contrast	Overview
System overview		
查 Aleminto		Export date
() Historicel deta	AC Phase Voltage (V)	
Power curve	1	
Deferr endrals	0.6	
Voltage analysis	0.4	
Current analysis	02	
Temperature ana SOC Analysis	283-4636 2024-66-67 2024-66-77 2024-66-77 2024-66-77 2024-66-77 2024-66-77 2024-66-77 2024-66-77 2024-66-77 2024-66-78 2024-66-	2524-08-29 16:11:09
Backward batter	Transfer Stransfer	
Plant info v	AC Phase Current (A)	
🖶 EMS Settings 🗸 🗸	1 03	

Figure 6-105 Viewing inverter curve in overview mode

## 6.9.3 Battery Analysis

View the status and data on the battery cluster and cells, and identify cells with least performance for precautions and countermeasures in advance.

#### 6.9.3.1 Voltage Analysis

View the voltage details of the battery system and battery clusters in **Voltage analysis**, and voltage distribution and curve of cells in **Voltage cell analysis**.

#### Voltage Analysis

Step 1: Select Historical data > Battery analysis > Voltage analysis > Voltage analysis.

Step 2: Set the Time, select Cabinet SN or Battery Cluster SN, and then click Check.

	· 2024-08-29 🗎	Cabinet SN: TF	RENE01	×	Check			Export
attery system	voltage (V)							
800							 	
	024-08-29 14:18:50							
	024-08-29 14:18:50 Battery system voltage: 785	5.5						
		.5						
400		3.5						



Battery of	cluster vo	Itage curve												
Time:	2024-08-29	- 2024-08-;	29 <b>D</b> E	Battery cluster SN:	2068900400	0025	•	Check						Export data
Batter	ry cluste	voltage (V)	)											
800														
600														
400														
200														
0														
2024 14:	1-08-29 18:30	2024-08-29 14:18:50	2024-08-29 14:19:10	2024-08-29 14:19:30	2024-08-29 14:19:50	2024-08-29 14:47:30	2024-08-29 14:47:50	2024-08-29 14:48:10	2024-08-29 14:48:30	2024-08-29 14:40:50	2024-08-29 14:49:10	2024-08-29 14:49:30	2024-08-29 14:49:50	2024-08-29 14:50:10
							Battery clust	er voltage						

Figure 6-107 Viewing battery cluster voltage curve

Battery cluste	er voltage diffe	rence curv	e										
Time: 2024-0	8-29 - 2024-0	8-29 E	Battery cluster SI	4: 20G8Y00A	000025	~	Check						Export data
Battery clu	ister voltage d	ifference (	mV)										
6 5													
4 3													
1													
2024-08-29 14:18:30	2024-08-29 14:18:50	2024-06-29 14:19:10	2024-08-29 14:19:30	2024-08-29 14:19:50	2024-08-29 14:47:30	2024-08-29 14:47:50	2024-08-29 14:48:10 voltage difference	2024-08-29 14:48:30	2024-08-29 14-48:50	2024-08-29 14:49:10	2024-08-29 14:49:30	2024-08-29 14:49:50	2024-08-29 14:50:10



## **Related Operation**

Click **Export data** to export the data to an Excel file.

## Cell Voltage Analysis

- Step 1: Select Historical data > Battery analysis > Voltage analysis > Cell voltage analysis.
- Step 2: Set the Time, select the Battery Cluster SN No and indicator as needed, and then click Check.

Cell voltage distributi	on						
		Time:	2024-08-29 15:10:00	8	Battery cluster SN:	2006Y0A0000001	Check
Voltage (V)							
3.5							
3	Cell ID: 13			•••••	•••••••••		•••••
2	Collocation and 2.20						
1.5							
0.5							
1 4 7 10	13 16 19 22 25 28 31 34 37	40 43 45 49 Si	55 58 61 64	67 70 73 7	6 79 82 85 8	88 91 94 97 100 1	103 106 109 112

Figure 6-109 Viewing voltage distribution

Itage curve																
	Time:	2024-08-29	- 2024-0	8-29 🖽	Battery	cluster SN:	2008Y0A0	000001	~	s	elect indicators	: <b>1</b> x			~	Ch
v																
5			•	•	•	•	•									
.5																
2																
5				2024-08-2	9 01:25:10											
5				• 1. 5.20												
0		20. 2024.02.0				2024 20 20	2024 00 20	2024 02 02	2024 00 20	2224 00 20	20234 400 200		2024 02 22	2024 02 22	2024-08-20	
24-08-29 2024-08-2 0053/50	9 2024-08 01471	-29 2024-08-3 0 02-41-30	9 2024-08-2	9 2024-08-	29 2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-29	2024-08-25	2

Figure 6-110 Viewing cell voltage

**Related Operation** 

Click **Export data** to export the data to an Excel file.

6.9.3.2 Current Analysis

#### Step 1: Select Historical data > Battery analysis > Current analysis.

Step 2: Set the Time, select the Cabinet SN or Battery cluster SN, and then click Check.



Figure 6-111 Viewing battery system current curve



Figure 6-112 Viewing of battery cluster current curve

#### **Related Operation**

Click **Export data** to export the data to an Excel file.

#### 6.9.3.3 Temperature Analysis

View the temperature status of the battery cluster and battery cells respectively.

#### Battery Temperature Analysis

- Step 1: Select Historical data > Battery analysis > Temperature analysis > Battery temperature analysis.
- Step 2: Set the Time, select the Battery cluster SN, and then click Check.

Battery clust	ter temperature o	curve													
Time: 2024	-08-29 - 2024-08-	29 🗄	Battery cluster	SN: 2008	Y00A000025		~	Check							Export data
Battery cl	luster temperati	ure ("C)													
40															
30															
20															
10															
0	2024-08-2 1440:10	9 2024-08-29 14:50:50	2024-08-29 14:52:30	2024-08-29 14:54:10	2024-08-29 14:55:50	2024-08-29 14:57:50	2024-08-29 14:59:10	2024-08-29 15:00:50	2024-08-29 15:02:30	2024-08-29 15:04:10	2024-08-29 15:05:50	2024-08-29 15:07:30	2024-08-29 15:09:10	2024-08-29 15:10:50	2024-08-29 15:13:20
							Battery cluster	temperature							

#### Figure 6-113 Viewing battery cluster temperature curve

Batter	y cluster	tempera	ature differ	ence curv	re												
Time:	2024-08-	29 - 2	1024-08-29	🗄 Bat	tery cluster SN	2068900	A000025		-	Check							Export data
Bat	tery clus	ter temp	oerature di	fference	(°C)												
4																	
4																	
( 202 14	4-08-29	2024-08-29 1450:20	2024-08-29 14:51:50	2024-06-29 14:53:20	2024-08-29 14:54:50	2024-08-29 14:56:20	2024-06-29 14:57:50	2024-08-29 14:59:20	2024-08-29	2024-08-29 15:02:20	2024-06-29	2024-08-29	2024-08-29 15:06:50	2024-08-29	2024-06-29	2024-08-29	2024-08-29
14	548540	1450.20	14:51:50	14/53/20	145450	145620	14:57:50			15:02:20	15:03:50	15:05:20	15:06:50	15/06/20	15:09:50	15:11:20	15:13:10

Figure 6-114 Viewing temperature difference curve of battery cluster

**Related Operation** 

Click Export data to export the data to an Excel file.

#### Cell Temperature Analysis

- Step 1: Select Historical data > Battery analysis > Temperature analysis > Cell temperature analysis.
- Step 2: Set the Time, select the Battery cluster SN, and then click Check.



Figure 6-115 Viewing battery cell temperature

ell temperature curve														
Time	2024-08-29	- 2024-08-29	🖽 Batt	ery cluster SN:	2008Y0A00	00001	~	Sel	ect indicator	S: 1 ×			~	Check
π.														
35														
25											•			
20														
15														
5														
0														
2024-08-29 2024-08-29 2024 00:00:00 00:55:40 01:5	08-29 2024-08-29 1:20 02:47:00	2024-08-29 2 03:42:40	024-08-29 2024-08- 04:38:20 05:34:0	29 2024-08-29 0 06:29:40	2024-08-29 07:25:20	2024-08-29 20 08:21:00 0	09:16:40	2024-08-29 10:13:30	2024-06-29 11:09:10	2024-08-29 12:04:50	2024-08-29 13:00:30	2024-08-29 13:56:10	2024-08-25 14:51:50	
					<b>1</b>									

Figure 6-116 Viewing battery cell temperature curve

#### 6.9.3.4 SOC Analysis

View the changes in battery SOC through the time.

#### Step 1: Select Historical data > Battery analysis > SOC analysis.

Step 2: Set the Time, select the Battery cluster SN, and then click Check.



Figure 6-117 Viewing battery cluster SOC curve

#### 6.9.3.5 Backward Battery Cell Analysis

The five cells with the least performance of each battery cluster on the day are displayed. This helps you identify the backward cells and take prompt measures to ensure the stable performance of the system.

#### Step 1: Select Historical data > Battery analysis > Backward battery analysis.

Step 2: Select the Battery cluster SN, set the Time, and then click Check.

The maximum time interval is 7 days. The search result is displayed in the order of cell number, lowest voltage of the cell, and the report time.

SOLAX	Historical data > Battery	analysis > Backward battery analysis				🕀  😍 admin
Overview	Backward batt	ery analysis				
B Device list	The 5 lower	It cell voltage of each cluster for the day an	e automatically summarized to facilitate	the timely detection of underperforming be	atteries	
System management	Battery cluster SN	2368760400025 v	Time: 2024-08-29 · 2024	622 B Check		
C Historical data	Date			Cell number / Lowest voltage / Report tim	•	
Power curve		Cell No.1	Cell No.2	Cell No.3	Cell No.4	Cell No.5
Battery analysis	2024-08-29	106/327V/202406-2914-47:26	107 / 3.27v / 2024 08-29 14:47:26	102/3.27v/2024-08-29 14:50.16	105/3.27v/202408-2914/4726	104/3.27v/202408-2914:4726
Voltage analysis Current analysis						
Temperature ana						
Backward batter.						
Plant Info						
EMS Settings ~						

Figure 6-118 Viewing backward battery cells

## 6.10 Plant Information

View the basic information on the plant. The displayed plant information includes its name, location, system type, PV and energy storage data and more.

#### NOTICE!

Basic plant information displayed here is synchronized from SolaXCloud platform. The plant information cannot be modified on the webpage when EMS1000 is online, and you will have to modify the plant information on SolaXCloud platform if needed.

SOLAX	Plant info > Besic info	🕀  👌 admin 🗸
Overview     Device list	Basic info	
System overview	Plant name: *Ourseroy:     Inter-rings     OVY3     V	
器 System management~ 近 Alarm info	Country & Rigon:     PV Capacity(Kili)):	
(9 Historical data	Chine v 0 -Detailed address: ESS Size(Wh):	
Basic info	Plant timescone      P.     Plant photo:	
Electricity info	<ul> <li>rana (mazzałe w:</li> <li>rana polici</li> <li>(UTC-85.05(Haling-Chongang-trong Kong SARJahum)</li> </ul>	
	Read fire	

Log in to the webpage, and then select **Plant info > Basic info**.

Figure 6-119 Viewing basic information of the station

**Related Operation** 

Click  $\ensuremath{\textbf{Reset}}$  to modify the station information, which is available only when EMS1000 is offline.

#### 6.10.1 EMS Settings

Set parameters for the eight RS485 channels of EMS1000, perform related operations on EMS1000 such as system resetting, system upgrade and data clearance, and configure network settings for it.

#### 6.10.2 RS485 Settings

Configure parameters for the eight RS485 channels that EMS1000 offers to suit the connection requirements of multiple devices.

- **Step 1:** Log in to the webpage, and then select **EMS settings** > **RS-485 settings**.
- Step 2: For each channel, set the Baud rate, Parity and Stop bit as needed, and then click Save.

SOLAX	EN	IS settings > RS-485 settings							0.0	🧶 admin
al Overview		RS-485 settings								
Device list	Ľ	Ko-460 settings	0							
System overview		RS485 Addr	P	Baud rate		Parity		Stop bit		
88 System management~		1		19200	٣)	No parity	•	1		•
亡 Alarm info		2		19200	*	No parity	~	1		•
Historical data      V     Historical data		3		19200	×	No parity	*	1		•
Basic info		4		19200	•	No parity	•	1		v
Electricity info		5		19200	٣)	No parity	•	1		•
Meter info Message		6		19200	¥	No parity	*	1		•
EMS settings		7		19200	¥	No parity	•	1		•
RS-485 settings		8		9600	•	No parity	×	1		•
EMS upgrade Network settings										4 Save

Figure 6-120 Configuring RS485 settings

Parameter	Description
Baud rate	Data transmission rate of the channel, includes 9600, 19200, 38400, 57600 and 115200
Parity	Currently, only <b>No Parity</b> is supported.
Stop Bit	1 stop bit and 2 stop bits are supported.

#### Table 6-40 RS485 setting parameter description

#### 6.10.3 EMS Maintenance

Restart EMS1000, clear cache and data, restore it to factory settings if you need to, and enable or disable remote setting for remote access to the webpage through SolaXCloud platform.

#### 6.10.3.1 Resetting System

This is to simply restart EMS1000, and the system data will not be impacted.

- Step 1: Log in to the webpage, and then select EMS settings > EMS Maint.
- Step 2: On System reset, click Execute, and then click Confirm on the confirmation popup.



Figure 6-121 Resetting the system

#### 6.10.3.2 Clearing Cache

This is to clear the data stored during network breakpoint.

- Step 1: Log in to the webpage, and then select EMS settings > EMS Maint.
- Step 2: On Clear cache, click Execute, and then click Confirm on the confirmation popup.

SOLAX	EMS Settings + EMS Mont	0 🙂 🙂	admin
Constant	EMS Maint.		
Device kst			
System overview	5 System reset		
ES System management~			
Alarm into			
() Historical data ~	Restore factory settings		
Plant info ~	After performing this operation,		
Basic Info	Executing this contration will clear the data for network internation and		
Bestricity info	continuous transmission. Please confirm whether to proceed ?		
ENS Settings			
RS-415 Settors	Cancel Cancel Contin		
EWS Maint			
EMS Upgrade			
Network settings			

Figure 6-122 Clearing system cache

#### 6.10.3.3 Clearing Data

This is to clear all history data stored in EMS1000 SSD.

- Step 1: Log in to the webpage, and then select EMS settings > EMS Maint.
- Step 2: On Clear data, click Execute, and then click Confirm on the confirmation popup.

SOLAX	EAS bettings > EAS Maint.	🕀 🙎 admin -
a Overview	EMS Maint.	
B Device bat		
E System overview	System reset Execute Clear cache Execute Clear data	
83 System management-	Performing this operation, BMS. Execute difference of the operation will de. Execute the second seco	
Alarminto		
🕒 Historical data 🔍	Restore factory settings	
😢 Plant info 🔷 🔿	Alter performing this operation. Detection of Clear data X	
Basic info	After performing this operation, all historical data collected by the database	
Electricity w/o	will be cleared. Please confirm whether to proceed?	
EVIS Settings		
RS-485 Settions	Remote setting  Turning off renote setting real.	
EMS Maint	Turing of sends withing mea.	
EMS Upgrade		
Network settings		

Figure 6-123 Clearing system data

#### 6.10.3.4 Restoring Factory Settings

#### NOTICE!

EMS1000 will restore to factory settings and restart after you perform this function, and you need to unplug and plug the network cable again before you can continue to use the Device normally.

Step 1: Log in to the webpage, and then select EMS settings > EMS Maint.

Step 2: On Restore factory settings, click Execute, and then click Confirm on the confirmation pop-up.

SOLAX	EMS Settings > EMS Maint.	Ð	edmin
Overview     Device list	EMS Maint.		
System overview System management Alarm info	System reset Faculty F		
Historical data     Plant info     Historical cata     Historical data     Historical data     Historical data     Historical data     Historical data	Restore factory settings         ×           Are performing this operation, all data and settings will be cleared, and the EdMa will restar its completine, and will need to reconnect the EdMa will restar its completine, and and restar its completine, and and reconnect the EdMa will restar its completine, and will need to reconnect the EdMa will restar its completine, and and reconnect the EdMa will restar its completine, and		
EMS Maint EMS Upgrade Network settings	Remote setting Turney of encode setting max.		

Figure 6-124 Restoring EMS1000 to factory settings

#### 6.10.3.5 Remote Setting

Turn on or off remote setting on the webpage to allow or prevent SolaXCloud platform accessing the webpage remotely. The function is enabled by default.

- **Step 1:** Log in to the webpage, and then select **EMS settings** > **EMS maintenance**.
- Step 2: On Remote setting, click the enable and disable toggle, and then click Confirm on the confirmation pop-up.

SOLAX	EMS settings + EMS maintenance	0'⊕	🧶 admin -
al Overview	EMS maintenance		
Device list			
System overview	System reset		
83 System management~	Performing this operation, BMS L. Execute Executing this operation will dea. Execute Execute		
道 Alarm Info			
(9 Historical data ~	Restore factory settings		
Plant info	After performing this operation,		
EMS settings	Turning off remote setting means that SolaxCloud cannot be accessed		
RS-485 settings	remotely. Please confirm whether to execute it?		
EMS maintenance	Remote setting 3		
EMS upgrade Network settings	Turning off rende setting mean.		
Network settings			

Figure 6-125 Disabling remote setting

#### 6.10.4 EMS System Upgrade

NOTICE!	
<ul><li>System upgrade is available only for Admin account.</li><li>Operations on EMS1000 are not available during upgrade.</li></ul>	

**Step 1:** Log in to the webpage, and then select **EMS settings** > **EMS upgrade**.

Step 2: Click Choose file on the page, select and import the upgrade file, and then click Upgrade to start upgrading.

SOLAX	EMS Settings > EMS Upgrade		•	🧶 admin -
a Overview				
E Device list				
System overview				
88 System management~				
<u>评</u> Alarm info				
🕒 Historical data 🗸 🗸		EMS Upgrade Place note that you will not be able to operate EMS during the upgrase process		
Plant info ~				
EMS Settings ^		Current version: V003.39		
RS-485 Settings		•		
EMS Maint.		0		
Network settings		Choose file		
1				

Figure 6-126 Upgrading EMS1000

#### 6.10.5 Network Settings

Configure network parameters for EMS1000 under 4G and LAN mode.

- **Step 1:** Log in to the webpage, and then select **EMS settings** > **Network settings**.
- Step 2: Set Communication method to LAN or 4G, set the corresponding parameters, and then click Save.

NOTICE!						
The external network segment cannot be 192.168.11.X or 192.168.10.X in case of IP address conflict.						
SOLAX	EMS settings > Network	settings			0.0	🧶 admin 🗸
Overview	Network settin	gs				
Device list     System overview	+ Communica :	LAN	v			
BB System management~	• DHCP:					
道 Alarm info	• IP Address:	Please enter				
Historical data      Historical data	* Subnet mask:	Plesse enter				
EMS settings	<ul> <li>Gateway:</li> </ul>	N/A				
RS-485 settings	• DNS:	192.168.225.1		(Tip: Support multiple inputs, separated by commas)		
EMS maintenance						
EMS upgrade				Reset		ave

Figure 6-127 Setting network parameters

**Related Operation** 

Click **Reset** to clear all existing parameters.

# 7 Maintenance and Troubleshooting

## 7.1 Maintenance

Maintain EMS1000 regularly to ensure its long-term stable performance.

Table 7-1 Maintenance routine

No.	Maintenance Item	Cycle
1	Check and update the software of EMS1000 when new software versions are released.	Subject to the official release of a new version
2	Modify the password regularly, and keep the password at a relatively high security level.	
3	Check the hardware status of EMS1000, including the termi- nals, the LED indicators and more.	Subject to the maintenance of the system
4	Check the connection and arrangement of the cables.	-

## 7.2 Troubleshooting

When an exception occurs, check the troubleshooting list below for possible reasons and solutions. For problems that cannot be solved or not specified in the list, contact our technical support. By then, prepare your device SN and problem.

No.	Problem	Possible Reason	Solution
1	EMS1000 cannot be powered on.	<ul> <li>The power supply terminal is not inserted into, or is loose from the main part of</li> </ul>	<ul> <li>Check the wiring of the power supply terminal, and secure the screw for it.</li> <li>Supply power for the cabinet.</li> <li>Contact the installer or SolaX technical support.</li> </ul>

Table 7-2 Possible problems, reasons and solutions

No.	Problem	Possible Reason	Solution
2	Connected devices cannot be found.	<ul> <li>The wiring sequence of the communication cables is incorrect.</li> <li>The communication cables are not properly connected to the correct terminals of EMS1000.</li> <li>The parameters set for RS485 communication on the webpage are inconsistent with the actual situation.</li> </ul>	<ul> <li>Check the connection status of the communication cables, and reconnect them if necessary.</li> <li>Check the parameters for RS485 communication, and ensure that the baud rate, parity and stop bit are set correctly. If multiple devices are connected through RS485 terminals, the address cannot be repeated.</li> </ul>
3	The device con- nected to EMS1000 displays offline on the webpgae.	<ul> <li>The communication cable between EMS1000 and the device is not properly connected.</li> <li>The device is powered off or is abnormal.</li> <li>The device communication parameters have been modified.</li> <li>The device has been replaced.</li> </ul>	<ul> <li>Check the communication cable connection, and reconnect it if necessary.</li> <li>Check if the device is powered off or fails to operate due to exception. In this case, troubleshoot the device and power on it again.</li> <li>Check the RS485 communication parameters of the device, and set these parameters to be compatible with EMS1000.</li> <li>If the device has been replaced, search for it or manually add it to EMS1000 again.</li> </ul>
4	EMS1000 Wi-Fi cannot be found.	The Wi-Fi signal is weak.	Open the cabinet door and try again.
5		<ul> <li>EMS1000 fails to bind a plant on SolaXCloud platform.</li> <li>4G communication fails.</li> <li>LAN communication fails.</li> </ul>	<ul> <li>Create a new plant and bind EMS1000 to it, or directly</li> <li>bind EMS1000 to an existing plant.</li> <li>See solutions for 4G communication failure below.</li> <li>See solutions for LAN communication failure below.</li> </ul>

No.	Problem	Possible Reason	Solution
6	4G communication fails.	<ul> <li>SIM card is not inserted, is damaged or runs out of credit.</li> <li>4G communication parameters are set incorrectly.</li> <li>4G signal strength is weak.</li> </ul>	<ul> <li>Check the SIM card slot, and make sure the SIM card is in good condition and properly inserted.</li> <li>Contact the mobile service provider or solax technical support to recharge.</li> <li>Check the 4G communication parameters, and make sure the APN infomation are correct.</li> <li>Fasten or replace the antenna.</li> <li>Check the 4G singal on EMS1000 webpage.</li> </ul>
7	LAN communication fails.	<ul> <li>The network cable of EMS1000 is connected to the wrong NET terminal.</li> <li>Abnormal network on the site</li> <li>The communication is blocked by the network firewall</li> <li>LAN communication parameters are set incorrectly.</li> </ul>	<ul> <li>Check and make sure that the network cable is connected to NET4 of EMS1000.</li> <li>Check the availability of local network through a computer or phone.</li> <li>Check the firewall settings of local network, and release the domain and port that EMS1000 communicates with SolaXCloud platform.</li> <li>Select the IP acquisition method supported by the local network. For static IP, correctly enter the IP address, subnet mask, DNS and gateway.</li> </ul>
8	Device pairing failed.	The wiring between the cabinet and its devices is abnormal.	Check the wiring, reconnect the cables, and try again.

# 8 Technical Data

Т	able 8-1 Specification
Power supply	12 d.c. V-24 d.c. V
Ethernet	10/100/1000 Mbps
Dimensions (L $\times$ W $\times$ H)	232.0 mm × 113.2 mm × 59.0 mm
Weight	1900g
Max. power consumption	27 W
Operating temperature range	-40°C to +60°C
Ingress protection	IP20

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