SNE9610-PLUS
Protocol Converter
User Manual

SNEGRID Power Technology Co., Ltd.

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Foreword

Overview

This manual mainly introduces the installation, electrical connection, system operation, maintenance and troubleshooting of SNE9610 protocol converter (hereinafter referred to as SNE9610). Before installing and using SNE9610, familiarize yourself with its functions and features and read the safety information in this manual carefully.

The figures in this manual are for illustration only. The product appearance on site shall prevail. You can print the User Manual as required and keep it properly for future reference.

Readers

This manual is applicable for the professionals who install, repair and maintain SNE9610 in photovoltaic power station and the users who perform daily operation. Readers should have certain electrical knowledge and be familiar with electrical schematic diagrams and characteristics of electronic components.

Use of Manual

Please read the manual carefully before using the product. Keep the manual properly for the reference of operation and maintenance personnel. The contents of the manual as well as pictures, logos and symbols used belong to the properties of SNEGRID Power Technology Co., Ltd. All or part of the content shall not be reproduced publicly by outsiders without a written authorization. The contents of the manual will be updated and amended continuously, but it is inevitable that there may be some errors or slight discrepancy with the product. Users should refer to the products purchased and obtain the latest version of the manual from marketing

channels.

Revision History

Version	Date	Remark
V1.0	September 6, 2021	First official release of PLUS version

Chapter 1 Safety Precautions

1.1 Safety Instructions

SNE9610 produced by SNEGRID Power Technology Co., Ltd. (hereinafter referred to as SNEGRID) is designed and tested strictly in accordance with relevant safety laws and regulations. However, as it is electrical and electronic equipment, the following safety instructions shall be followed during installation and maintenance, otherwise improper operations will cause injury and property loss to operators and the third-party.

· Operate it under the operating conditions as described in this manual.

· The installation and operating environment shall not exceed the provisions of relevant international or national standards.

· It is not allowed to disassemble and change the product or modify the software code without authorization.

· Follow the operation instructions and safety warnings in the product and document during operation.

1.2 Personnel Requirements

· The installation and maintenance personnel of SNEGRID must receive strict training to understand various safety precautions and master correct operation methods.

· Only qualified professionals or trained personnel are allowed to install, operate and maintain the equipment.

· Only qualified professionals are allowed to dismantle safety facilities and repair the equipment.

· The personnel operating the equipment, including operators, trained personnel and professionals, should have the special operation qualifications required by the

local state, such as qualifications of high voltage operation, aloft work, special equipment operation, etc.

· The equipment or parts (including software) must be replaced by professionals or authorized personnel.

1.3 Electrical Requirements

· If the equipment needs to be grounded, then the protection earth wire must be installed before the installation of the equipment and must be dismantled finally during the removal of the equipment.

· The grounding conductor is not allowed to be damaged.

· It is not allowed to operate the equipment if the grounding conductor is not installed.

· The equipment shall be permanently connected to the protection earth wire. Before operating the equipment, check the electrical connection of the device and ensure that the equipment is grounded reliably.

· All electrical connections must meet the requirements of national/regional electrical standards.

· Ensure that the power cable label should be correct before connecting a power cable.

· If there are multiple inputs, please disconnect all inputs and ensure that the equipment is powered off completely before operating the equipment.

· Please follow the anti-static protection regulations and wear anti-static clothes, anti-static gloves and wrist strap during the installation, operation and maintenance of the equipment.

Chapter 2 Product Introduction

2.1 Product Functions

SNE9610 is a monitoring and management equipment applied in the photovoltaic power station inverter and other photovoltaic equipment, integrating interface convergence, protocol conversion, data acquisition, data storage, centralized monitoring and centralized maintenance and other functions.

2.1.1 Flexible Networking

· Support RS485, Ethernet, WiFi communication.

· Support the access of sensors, electricity meters, weather stations, inverters and other equipment under variety of environments.

2.1.2 Assisting Operation and Maintenance

· Support batch parameter configuration and software upgrade of inverters.

· Support remote desktop function to reduce operation and maintenance costs.

· Support power grid control instructions and power factor control.

· Support local real-time monitoring without access to network.

2.1.3 Easy to Operate

· Automatically search and assign inverter address.

· Equipped with embedded Web operation interface, supporting mobile phone access without App download.

2.1.4 Rich Protocols

· Support protocol conversion between common protocols.

2.2 Appearance

2.2.1 Dimensions

Length	Width	Height
199.66mm	121.25mm	31.8mm

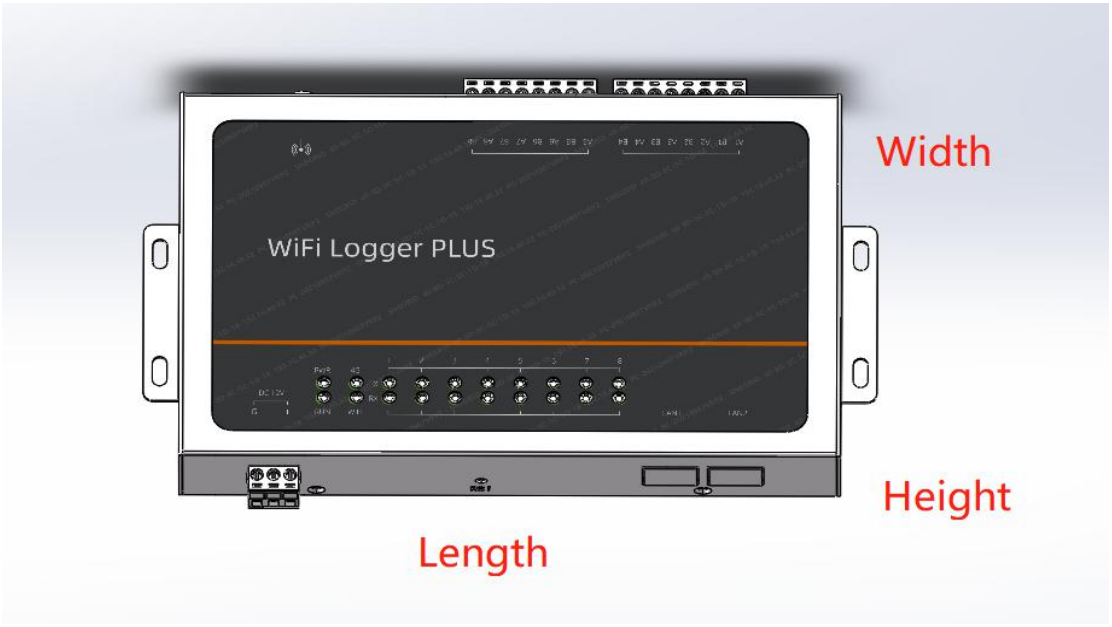

Fig. 2-1 External View of SNE9610

2.2.2 Appearance

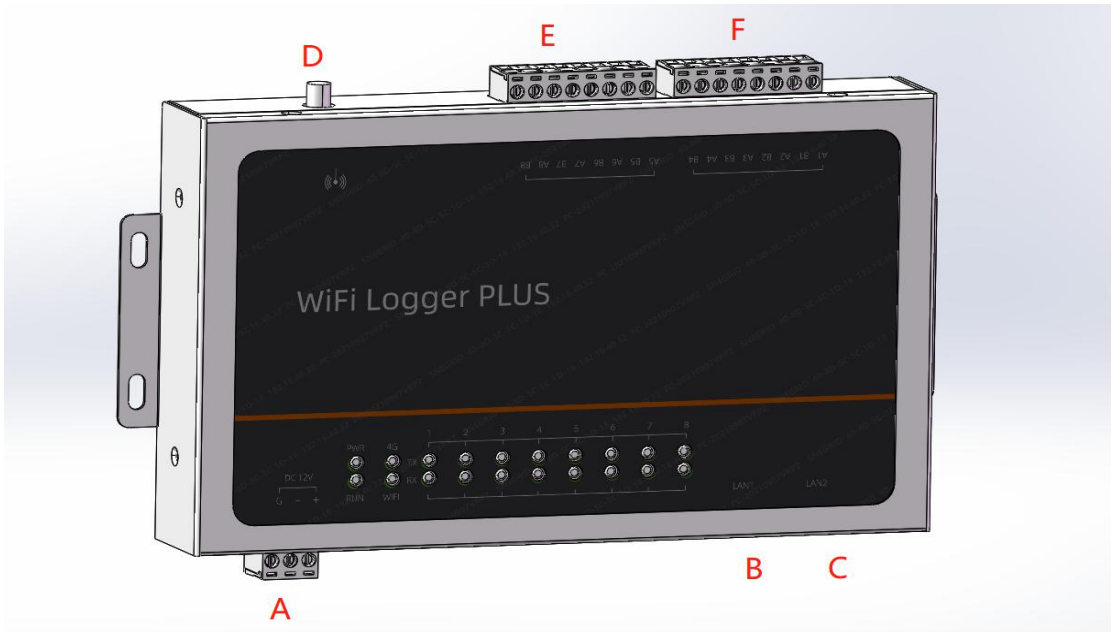

Fig. 2-2 Front View of SNE9610

No.	Port	Port Description
A	DC12V	DC input
B	LAN1	Ethernet port 1
C	LAN2	Ethernet port 2
D	ANT	WiFi antenna interface
E	COM5-C0M8	5th ~ 8th RS485 interfaces
F	COM1-COM4	1st ~ 4th RS485 interfaces

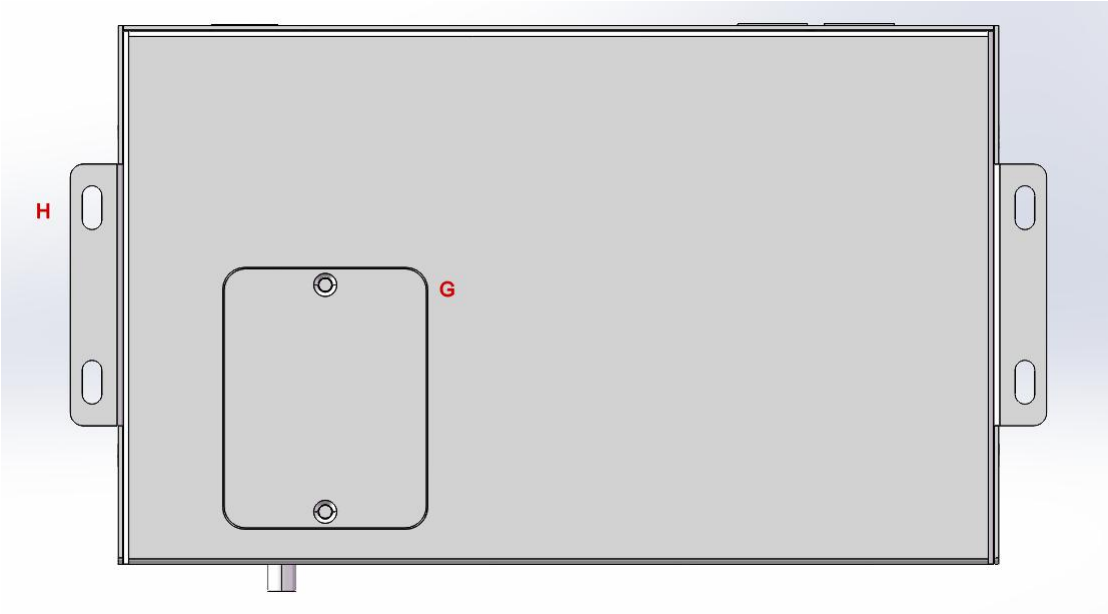

Fig. 2-3 Rear View

No.	Port	Port Description
G	Card slot	Micro SIM card slot
H	Fixed hole position of guide rail	Fixed mounting hole position of guide rail

2.2.3 Indicator Light

Indicator Light	Status	Status Description
PWR	Normally on	Normally on after power-on
RUN	Flashing	Flashing when the system is normally running
4G	Normally on	Normally on after successful access to network
WiFi	Normally on	Normally on after successful access to network
COM1-TX	Flashing	Flashing after the system sends COM1 data
COM1-RX	Flashing	Flashing after the system receives

		COM1 data
COM2-TX	Flashing	Flashing after the system sends COM2 data
COM2-RX	Flashing	Flashing after the system receives COM2 data
COM3-TX	Flashing	Flashing after the system sends COM3 data
COM3-RX	Flashing	Flashing after the system receives COM3 data
COM4-TX	Flashing	Flashing after the system sends COM4 data
COM4-RX	Flashing	Flashing after the system receives COM4 data
COM5-TX	Flashing	Flashing after the system sends COM5 data
COM5-RX	Flashing	Flashing after the system receives COM5 data
COM6-TX	Flashing	Flashing after the system sends COM6 data
COM6-RX	Flashing	Flashing after the system receives COM6 data
COM7-TX	Flashing	Flashing after the system sends COM7 data
COM7-RX	Flashing	Flashing after the system receives COM7 data
COM8-TX	Flashing	Flashing after the system sends COM8 data
COM8-RX	Flashing	Flashing after the system receives COM8 data

2.3 Product Model

Model	Description
SNE9610-PLUS	Support WiFi and ETH communication

SNE9610-PLUS not support 4G communication.

Chapter 3 Equipment Installation

3.1 Packaging Information

After opening the SNE9610 packaging, please check whether accessories are complete and whether there is obvious damage of appearance. If there is any damage or missing items, please contact your dealer.

No.	Device Name	Quantity	Unit
1	SNE9610	1	set
2	2EDGK-5.08-03P port	1	piece
3	2EDGK-5.08-08P port	2	piece
4	WiFi antenna	1	piece
5	Certificate of Quality	1	piece
6	User Manual	1	piece

3.2 Device Installation

3.2.1 Installation Location

The following required shall be considered during selection of installation location:

· SNE9610 protection grade of IP20 without waterproof function, only applicable for indoor use.

· Do not put SNE9610 in the place prone to water in case of damage to SNE9610. The ambient temperature should be in the range from -40℃ to +60℃, and it shall be protected from direct sunlight.

· Keep it away from moisture, damp and corrosive substances.

· Ensure that the communication distance of RS485 is less than 1000m and that of Ethernet is less than 100m.

· It is recommended to install SNE9610 at an appropriate height to facilitate operation and maintenance.

· The installation method and position must be suitable for the weight and size of SNE9610 (with suspension loop) (L * W * H: 224mm * 121.25mm* 31.8mm).

· Make sure that there is enough space around SNE9610, that the installation position is 1500mm from the ground, and that at least 500mm of maintenance space is reserved. The minimum spacing shall meet the following requirements shown in the following figure.

3.2.2 Wall Mounting

· Select an appropriate mounting plane.

· Use a marker to mark the locations of drilling holes.

Opening Center Distance	Length
Horizontal distance	214mm
Vertical distance	47.5mm

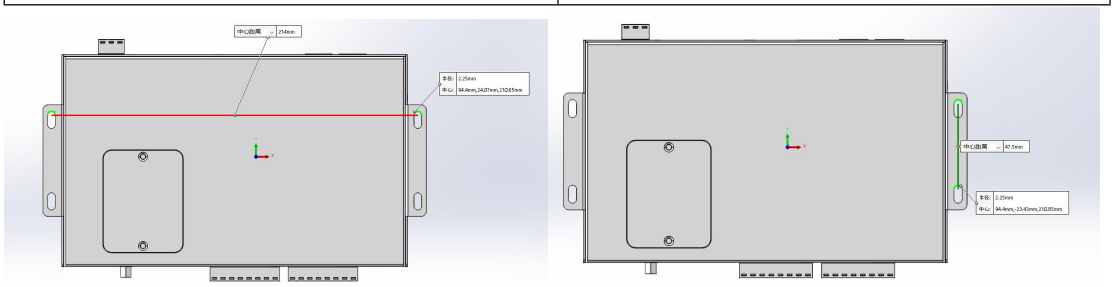

Fig. 3-1 Opening Dimensions of SNE9610 Wall Mounting

· Drill holes on the marking locations with a hammer drill.

· Fix all expansion tubes into the holes with rubber hammer.

· Install SNE9610 on the wall with gaskets and self-tapping screws.

· Check and confirm whether SNE9610 is firmly installed.

3.2.3 Installation of Guide Rail

· Install the guide rail in a proper position and fix it well.

· Install two guide rail mounting fixed seats with the center hole distance of 214mm.

· Install SNE9610 on the mounting fixed seat of the guide rail with screws.

· Check whether SNE9610 is firmly installed.

3..2.4 Installation of Antenna

· The sucker base must be placed on a metal object outside the container to avoid affecting signal reception. The container must be drilled to reserve the sucker antenna outlet with a diameter of 20mm.

· Fix the sucker base on the outside of the container body, pass the nut end of the sucker antenna through the hole, and screw it clockwise to the corresponding antenna of SNE9610.

Chapter 4 Electrical Connection

4.1 Port Description

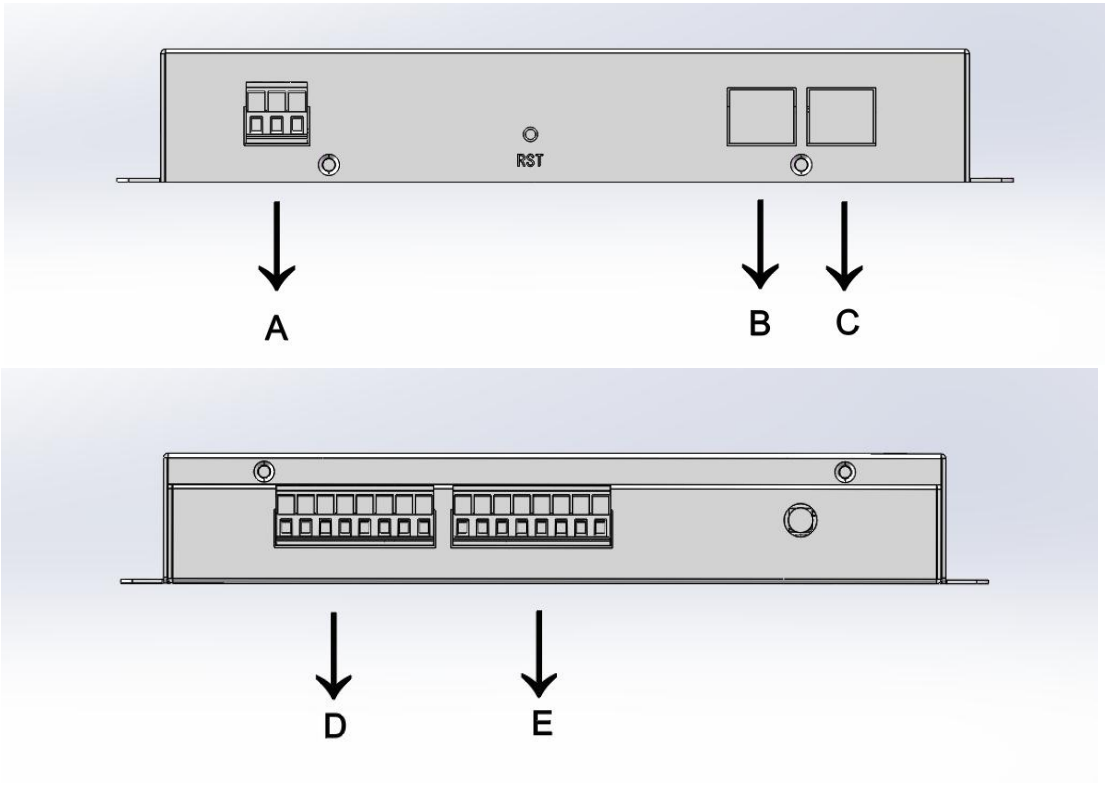

Fig. 4-1 Schematic Diagram of SNE9610 Port

No.	Port	Port Description
A	POWER	DC 12V input, width voltage, supporting DC12-36V
B	LAN1	Ethernet Port 1, default IP: 192.16.1.136
C	LAN2	Ethernet Port 2, default IP: 192.16.2.136
D	COM1-4	RS485 Communication Interface 1-4
E	COM5-8	RS485 Communication Interface 5-8

4.2 Device Connection

4.2.1 Connection of Inverter

· Select RS485 communication cables with an appropriate length; 2* 0.75mm² Shielded twisted-pair cables are recommended.

· Peel off the protective layer of the communication cable by about 15mm and the

insulation layer by about 8mm~10mm with a wire stripper.

· Connect one end of the cable with the insulation layer peeled off to RS485 COM port of SNE9610, RS485 A to the corresponding terminal of COM Port A and RS485 A B to the corresponding terminal of COM Port B.

· Connect the other end of the cable with the insulation layer peeled off to the inverter, RS485A to the terminal corresponding to RS485 Communication Port A of the inverter, and RS485B to the terminal corresponding to RS485 communication port B of the inverter.

· If SNE9610 is connected to multiple inverters at the same time, then the hand-in-hand connection method can be adopted; there are two multiplexed RS485 communication interfaces on the inverter side to connect one of the RS485 interfaces of the next inverter to another RS485 interface of the previous inverter. Note that the interfaces shall correspond to each other (A to A, B to B). The number of machines connected to a single COM port does not exceed 20.

4.2.2 Connection of Convergence Box

· When the convergence box is connected to SNE9610, it is recommended to use the convergence box that meets the requirements of Modbus protocol.

· The communication cables from the convergence box are connected to COM Port A and COM Port B of RS485 of SNE9610.

4.2.3 Connection of Box Transformer Measuring and Controlling Device

· When the box transformer measuring and controlling device is connected to SNE9610, it is recommended to use the communication protocol that meets the requirements of Modbus protocol.

· The communication cables from the box transformer measuring and controlling device are connected to COM Port A and COM Port B of RS485 of SNE9610.

4.2.4 Connection of Electricity Meter

· When the electricity meter is connected to SNE9610, it is recommended to use the electricity meter that meets the requirements of Modbus protocol.

· The communication cables from the electricity meter are connected to COM Port A and COM Port B of RS485 of SNE9610.

4.2.5 Connection of Environment Monitoring Instrument

· When the environment monitoring instrument is connected to SNE9610, it is recommended to use the environment monitoring instrument that meets the requirements of Modbus protocol.

· Connect the communication cables from the environment monitoring instrument to COM Port A and COM Port B of RS485 of SNE9610.

4.3 Connection of Power Supply

· SNE9610 supports DC12V power input. Before connecting cables, prepare two-core DC cables.

· Connect the AC side of the power adapter to the AC220V power supply, and the DC side to the POWER port of SNE9610.

Chapter 5 System Running

5.1 Check before Power-On

Check before power-on shall be conducted to ensure the normal operation of SNE9610 after power-on.

· Check that SNE9610 has been installed in place.

· Check that all cables between SNE9610 and other devices are connected correctly and firmly

· Check that RS485 communication cables of SNE9610 are connected correctly and firmly

· Check that cables are bundled neatly and beautifully. The cable ties are evenly distributed with proper tightness and same direction.

5.2 System Power-On

· Supply the power to SNE9610 and close the switch on the AC socket of the power adapter.

· Observe the RUN indicator light of SNE9610.

Chapter 6 WEB Configuration

6.1 Introduction of WEB Interface

· The data of the pictures on the WEB interface in this document are for reference only.

· When you log in the WEB with different identities, the parameters of the operation interface will be different. This document describes how to log in the operation interface as an administrator.

· Parameter names, ranges and default values are subject to change or adjustment and the display values shall prevail.

· When the system sends reset, shutdown or upgrade instruction to the inverter, the inverter may not be connected to the power grid, which may affect electricity generation.

· The power adjustment parameter of the power grid for the inverter shall be set by professionals. Incorrect setting of power adjustment parameter may cause that the inverter is not connected to the power grid according to the requirements of the power grid, which affects electricity generation.

6.2 Operating Environment

· Support Windows 7 or higher version operating system.

· Browser: It is recommended to use Chrome52, Firefox58, Internet explorer 11 or higher versions.

6.3 IP Configuration

· Connect one end of the network cable to LAN1 or LAN2 port of LAN1 and the other end to the computer.

· Default IP of LAN1 port is 192.16.1.136 and default IP of LAN2 port is 192.16.2.136.

· Modify the IP address of the computer so that the IP address shall be in the same network segment with the Ethernet port.

For example:

IP address: 192.16.1.137

Sub-net mask: 255.255.255.0;

Default gateway: 192.16.1.1

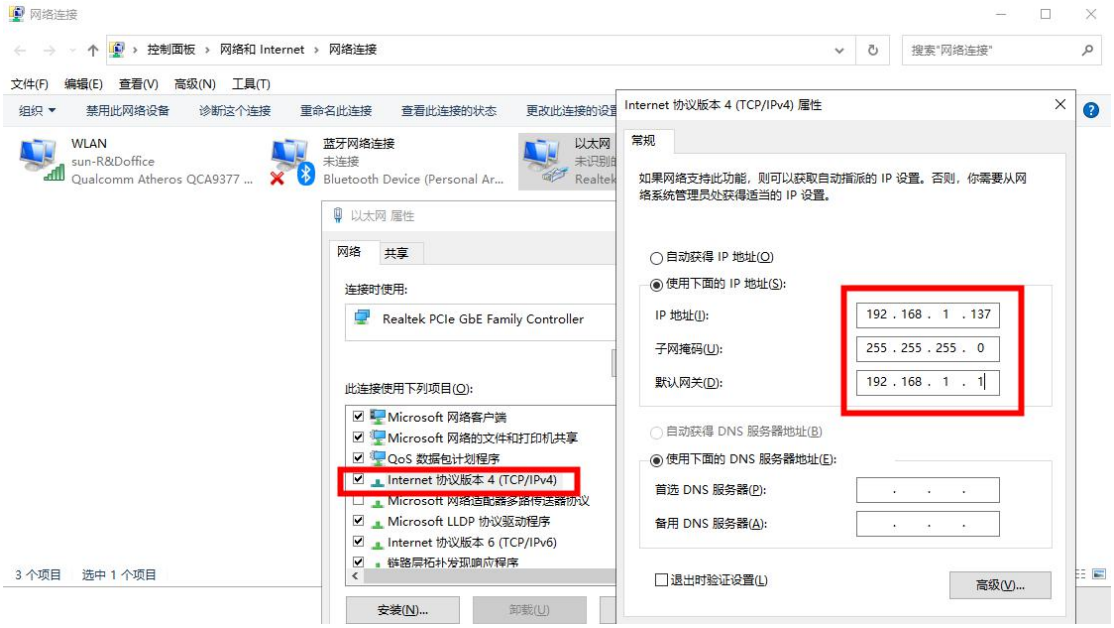

Fig. 6-1 Modification of Computer IP Address

6.4 Data Allocation of Inverter

6.4.1 Login

· Connect one end of the network cable to the computer and the other end to SNE9610; after modifying IP address of the computer, open the browser and enter 192.16.1.136 in the browser to enter the login interface.

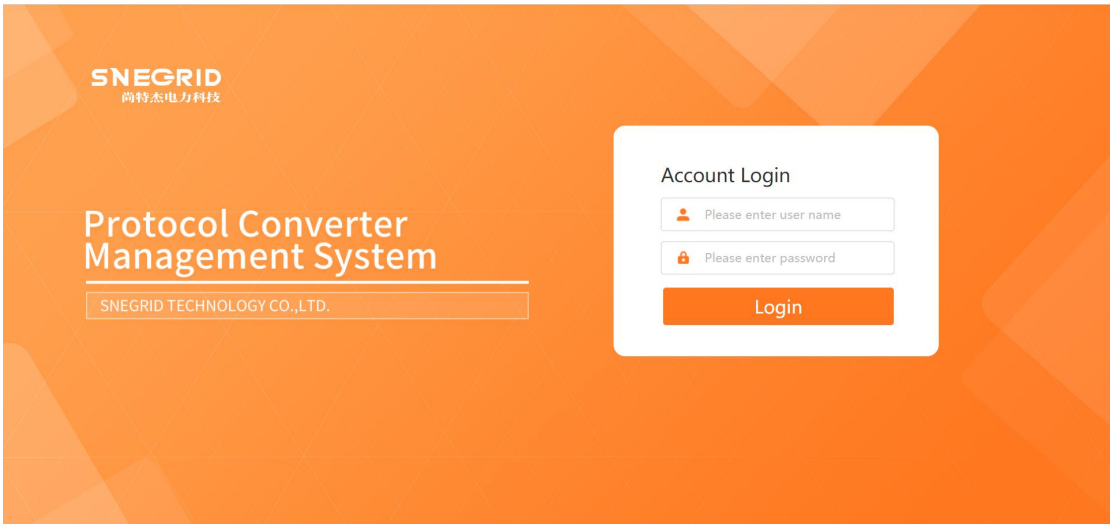

Fig. 6-2 WEB Login Interface

ID: admin

Password: admin123

6.4.2 Start Wizard

· Click [Start Wizard] button to enter the Start Wizard interface.

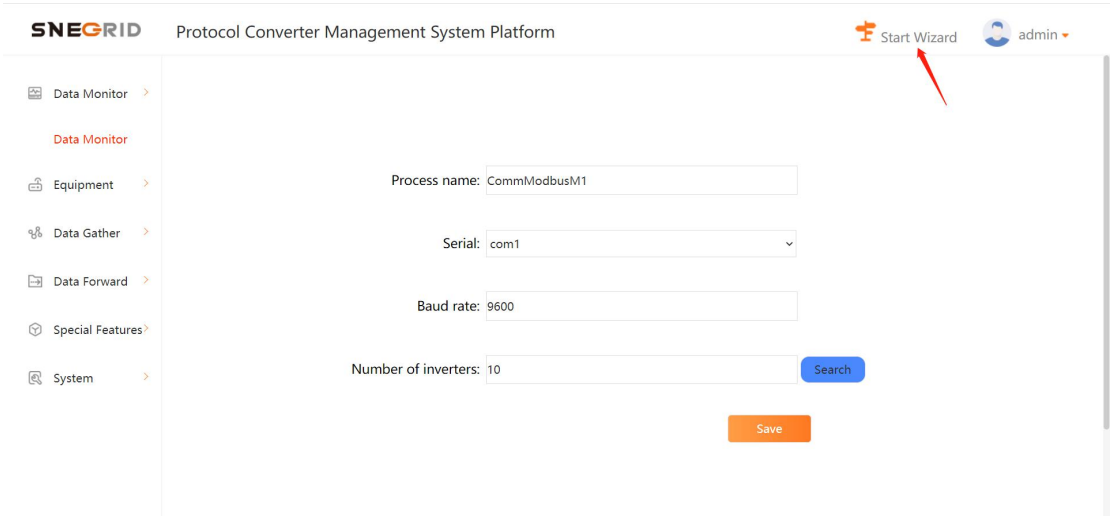

Fig. 6-3 Start Wizard Interface

· Factory default acquisition process is CommModbusM1, corresponding to COM1 serial port, baud rate of 9600.

Enter the number of inverters and click [Save] button. (If there are no more than 10 inverters, the corresponding collection point table will be automatically generated; if there are more than 11 inverters, you need to manually add devices.) If the inverters

support the address query, you can click the [Search] button to query the inverters, and the result will be returned after the query; click the [Save] button to save it.

6.4.3 Address Allocation Adjustment

· Click [Special Features] ->[Address Allocation Adjustment] button to enter the Address Allocation Adjustment interface of the inverter.

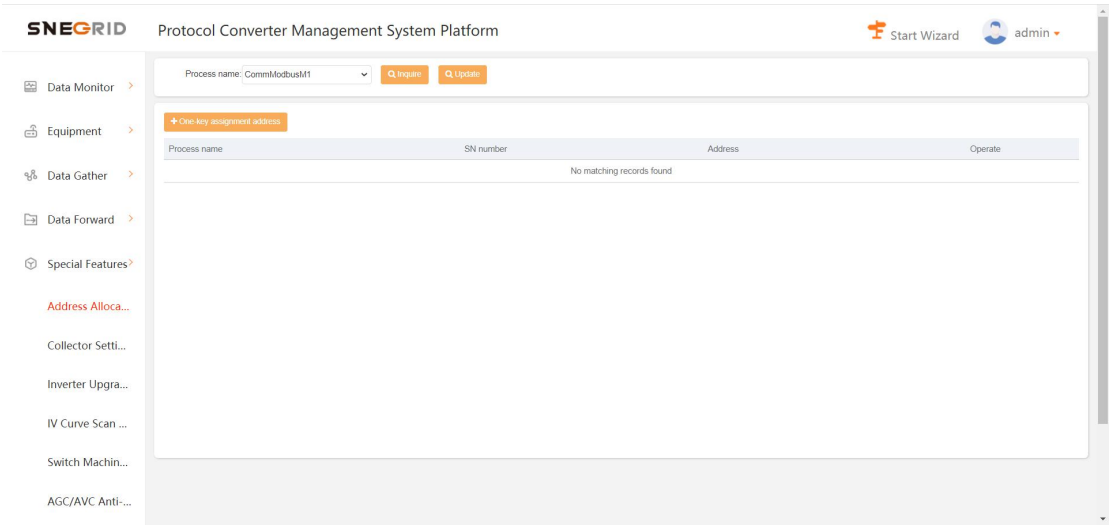

Fig. 6-4 Address Allocation Adjustment

· Click [Update] button to update the slave address of the inverter and then click [Inquire] button to obtain the updated address.(Requiring the firmware support of inverter)

· Click [One-key assignment address] button to assign the inverter address, enter the start address and click Assignment button.

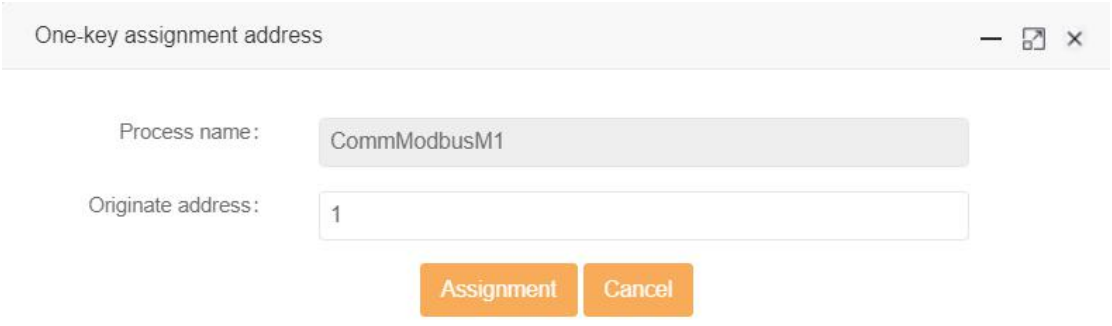

Fig. 6-5 One-Key Assignment Address

· Click [Edit] button to adjust the address, enter the slave IP address of the inverter to be modified and click [Sure] button.

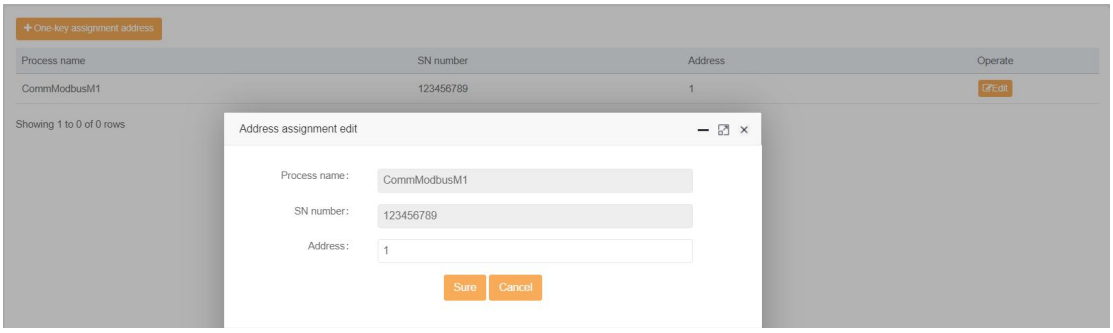

Fig. 6-6 Address Adjustment

· Address allocation adjustment requires the support of the inverter firmware. If the slave IP address of the on-site inverter has been set, the address allocation adjustment can be omitted.

6.4.4 WiFi Connection

· Click [System]->[Net Set Up] button to enter the network setting interface.

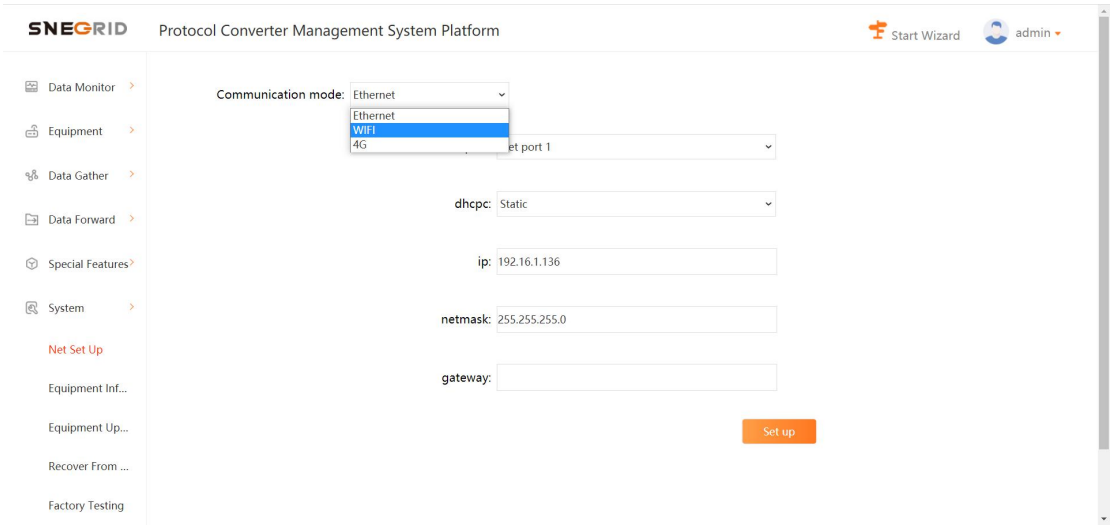

Fig. 6-7 Network Setting Interface

· Click WiFi button, select the network, enter the WiFi password and then click [Link] button for connection.

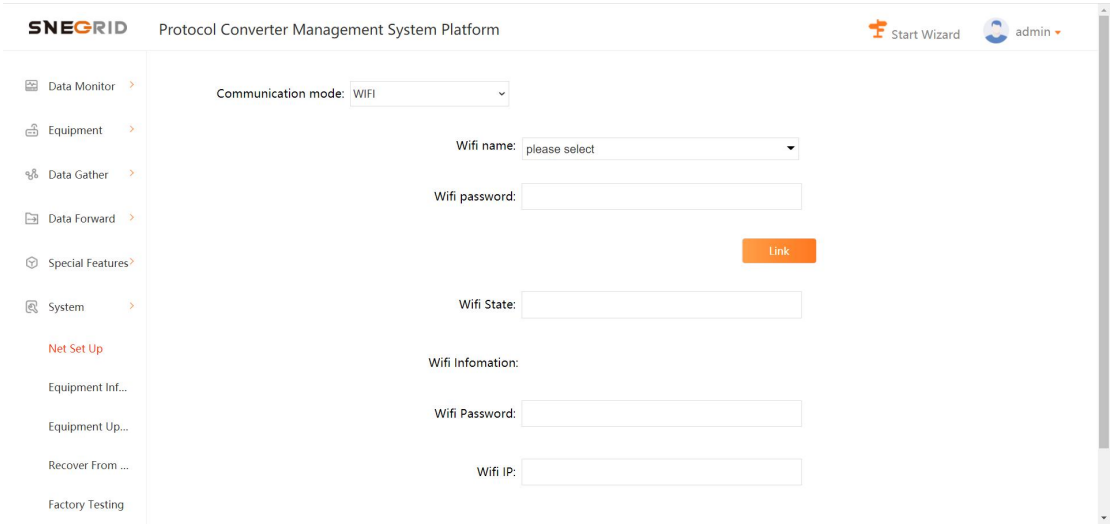

Fig. 6-8 WIFI Connection

· During waiting for the connection, switch the page to check the connection status.

· After successful connection, the interface will display connected status, WiFi name, WiFi password and WiFi IP address.

· If the interface displays unconnected state, please check whether the WiFi name and password are correct. Currently, the device only supports WiFi in the frequency band of 2.4GHz. Special settings may be made for some 2.4GHz/5GHz routers.

(Try not to use Chinese and special characters in WiFi name)

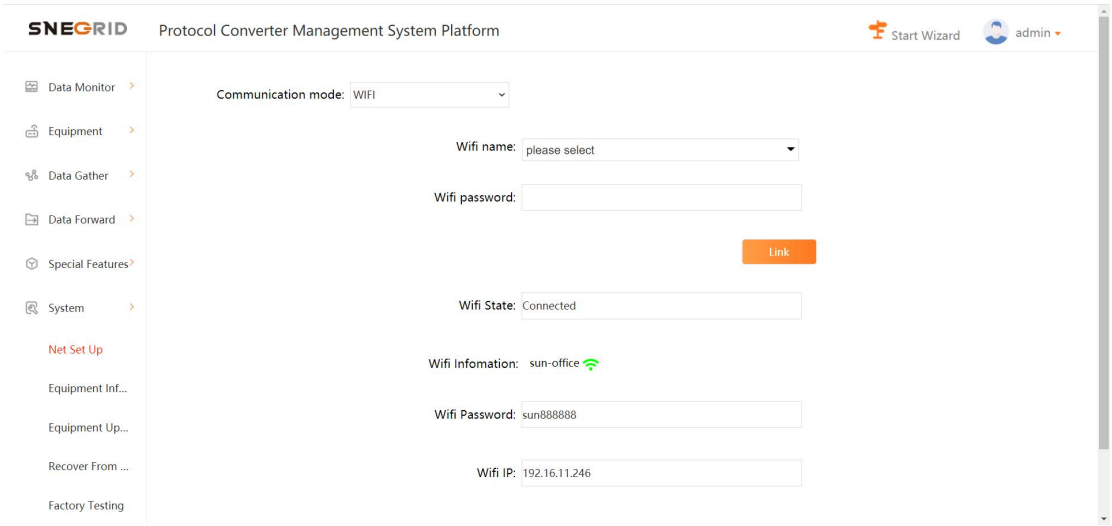

Fig. 6-9 WIFI Status

6.4.5 Restart Device

· Click [System]->[Recover From The Factory Set Up] button to enter the backup and recovery setting interface.

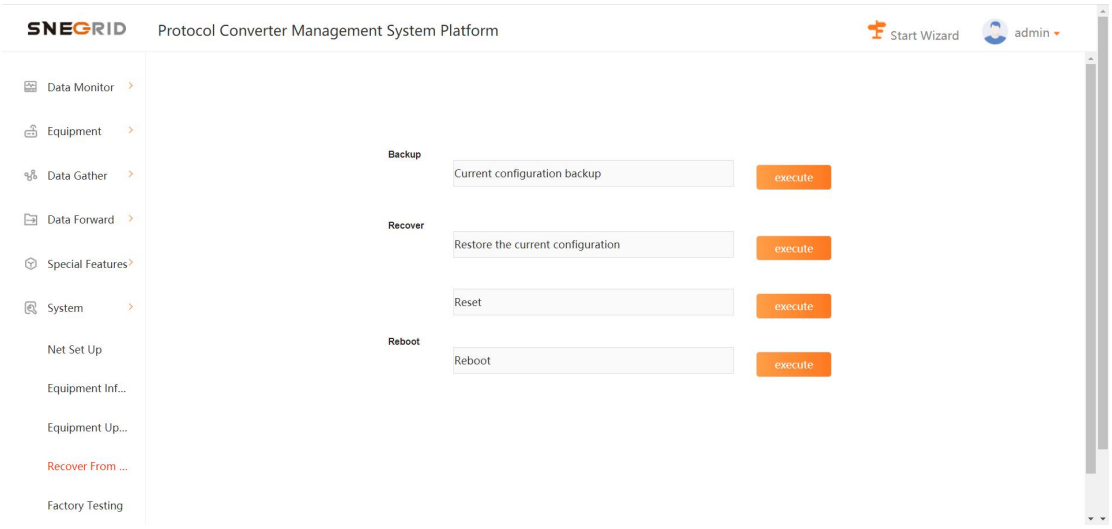

Fig. 6-10 Backup and Recovery Setting Interface

· Click [Execute] button under the Reboot option to restart the system.

Wait for one minute. After the system is restarted, the acquisition communication configuration of the inverter is completed. You can view the collected real-time data in the real-time data interface. In addition, you can log in the cloud to check the device status, and five minutes later, you can view the data of the inverters connected with the device.

6.5 Data Configuration of Other Devices

SNE9610 supports the data access of devices in other photovoltaic areas, such as convergence box, meteorological instrument and electricity meter; supports standard MODBUS protocol and baud rate of 9600bps. In this manual, an electricity meter is taken as an example.

6.5.1 Adding Equipment Type

· Click [Equipment]->[Equipment Type] button to enter the equipment module

type interface.

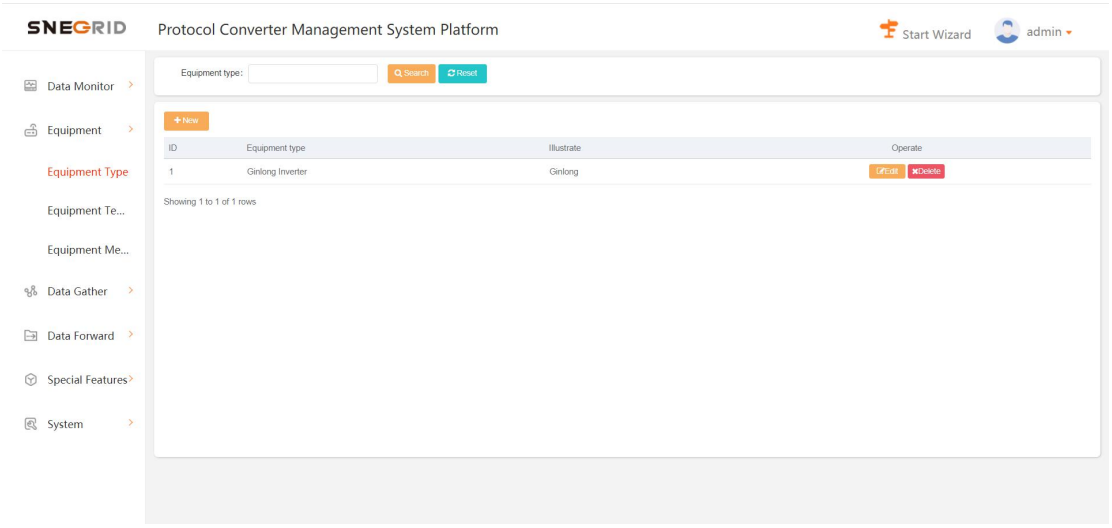

Fig. 6-11 Adding Equipment Type

· Click [+New] button to add collected equipment type.

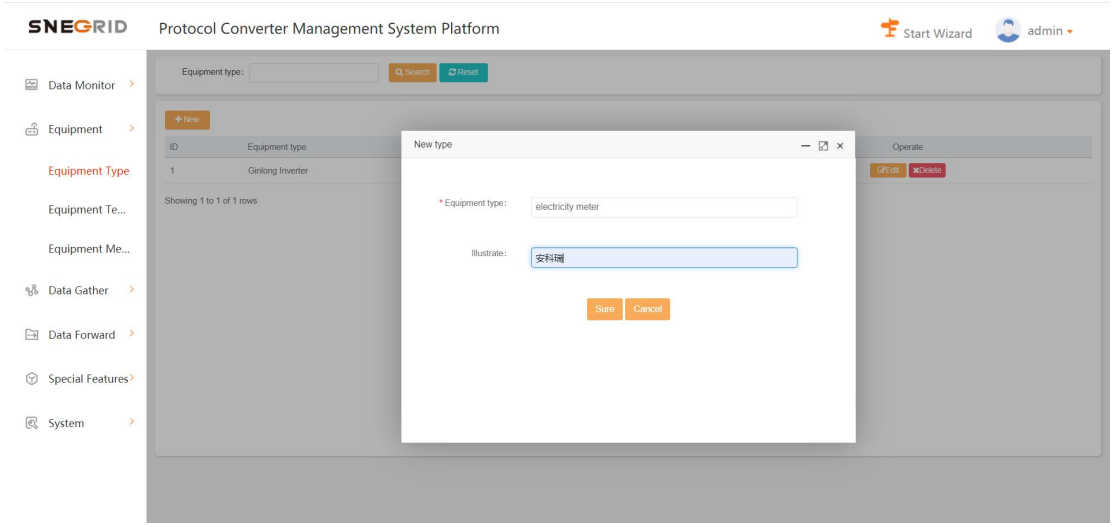

Fig. 6-12 Adding Equipment Type

6.5.2 Adding Equipment Template Point Table

· Click [Equipment] ->[Equipment Template] button to enter the equipment template interface, and then click [+New] button in this interface to complete the template point table for the devices added in the previous step.

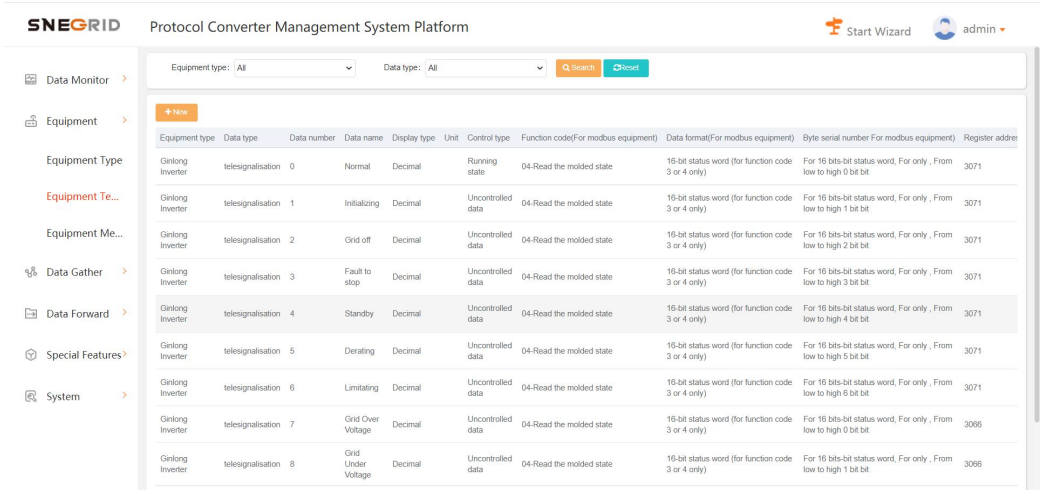

Fig. 6-13 Equipment Template

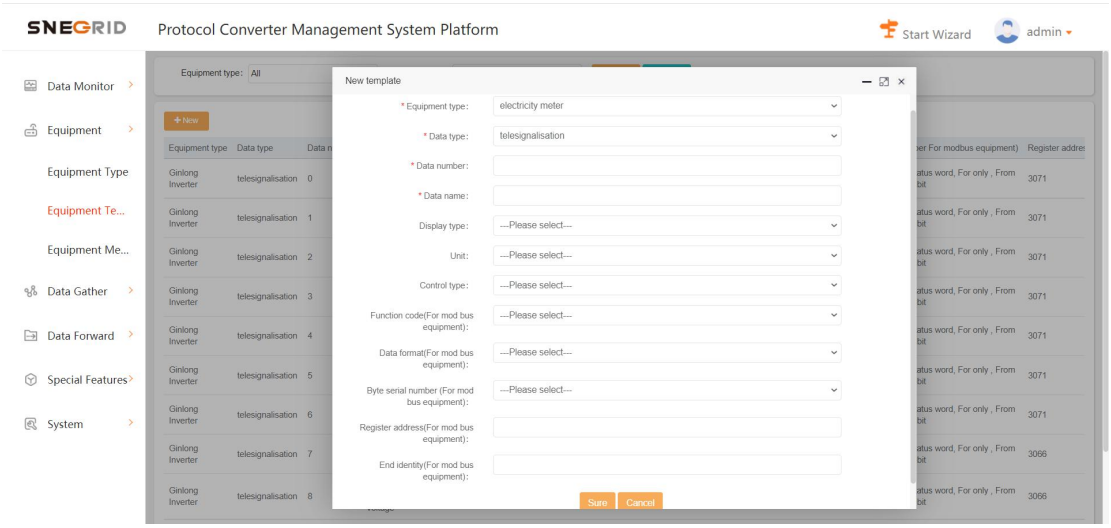

Fig. 6-14 Adding Equipment Template Point Table

Equipment type- Select the type of equipment to be added.

Data type- remote communication, telemetry, remote control, remote adjustment;

Data number- increasing successively from 0, the basis for automatic generation of ID;

Data name- name of the monitoring point, selected according to the communication protocol.

Display type- data display type, including decimal, hexadecimal or BCD.

Unit- unit, selected according to the communication protocol.

Control type- control type, generally non-control type, set for special points (for example, the active power of the point of interconnection shall be set for the

electricity meter in this field, which is the basis for anti-Anti-reflux later)

Function code- Function code, selected according to communication protocol.

Data format- Data type, selected according to communication protocol.

Byte Serial Number - serial number of the data byte, selected based on the communication protocol.

Register address- register address, selected according to communication protocol.

End identity- end identity, usually 0.

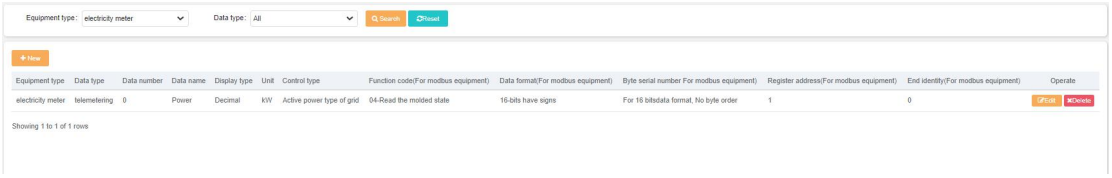

Fig. 6-15 Adding Point Table

All the measurement points needed should be added to the template according to the communication protocol of the equipment.

6.5.3 Adding Equipment

· Click [Equipment] - >[Equipment Measured Point] button to increase the number of equipment to be collected and then click [+New] button to add them.

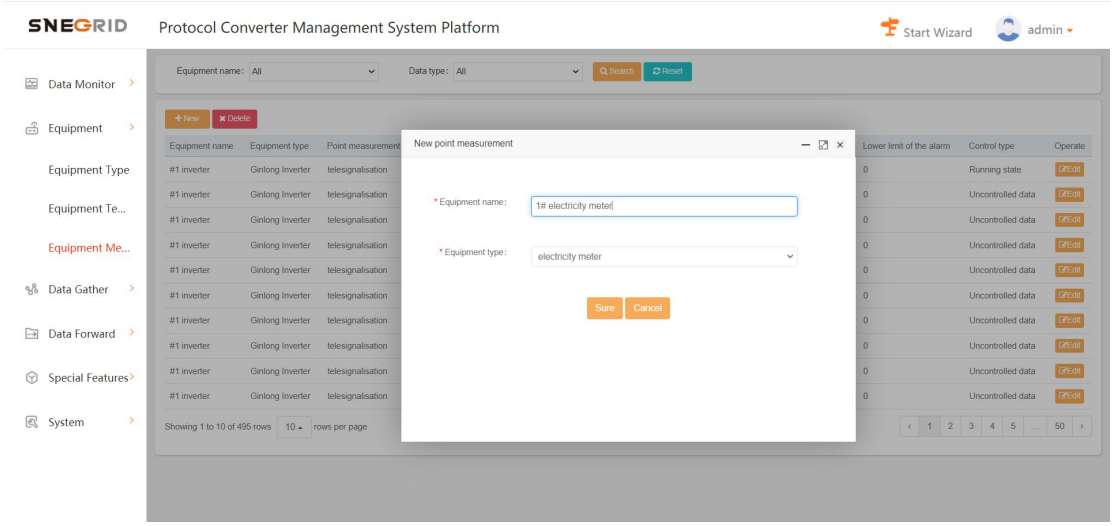

Fig. 6-16 Adding Equipment Measuring Point

Enter the name, select the equipment type, and click [Sure] button, then the

system will automatically generate the corresponding device measurement point and ID. At the same time, you can view the measuring point information of the added equipment in the real-time data interface. If there are multiple acquisition devices, please add them one by one.

6.5.4 Adding Acquisition Process

· Click [Data Gather] - >[Acquisition Process] button to increase the number of equipment to be collected and then click [+New] button to add them.

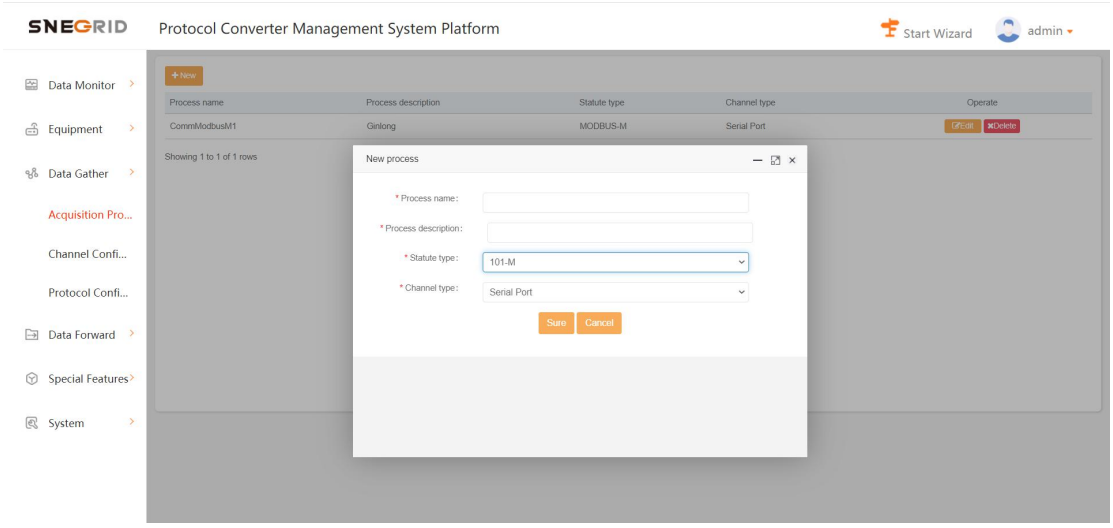

Fig. 6-17 Acquisition Process

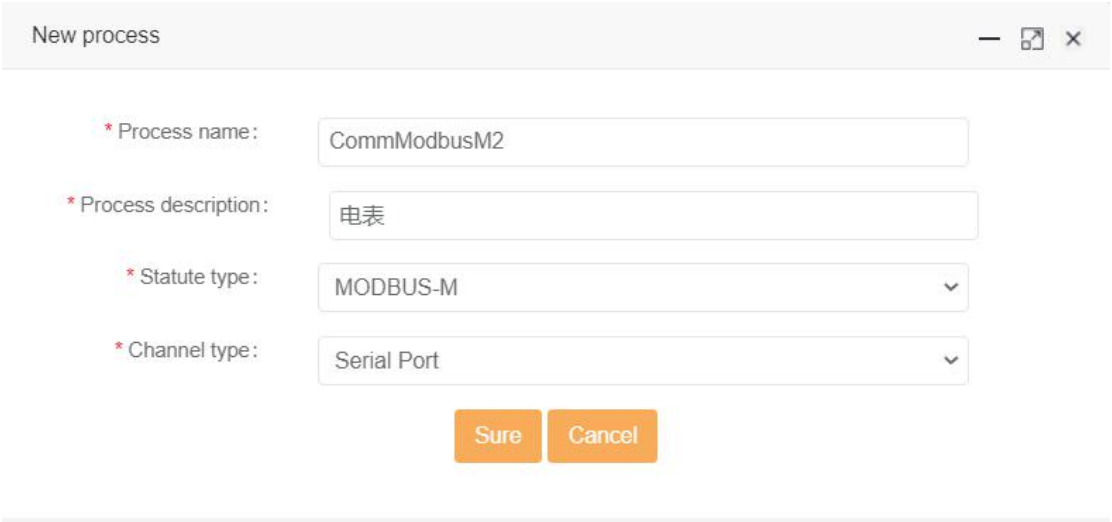

Fig. 6-18 Adding Acquisition Process

Process name- process name: CommModbusM2

Process description -process description: electricity meter

Statute type- process type: MODBUS master station

Channel type- channel type: serial port

6.5.5 Acquisition Process Configuration

· Click [Data Gather] - >[Channel Configuration] button to select the processed added newly and then click [+Increase] button to add them.

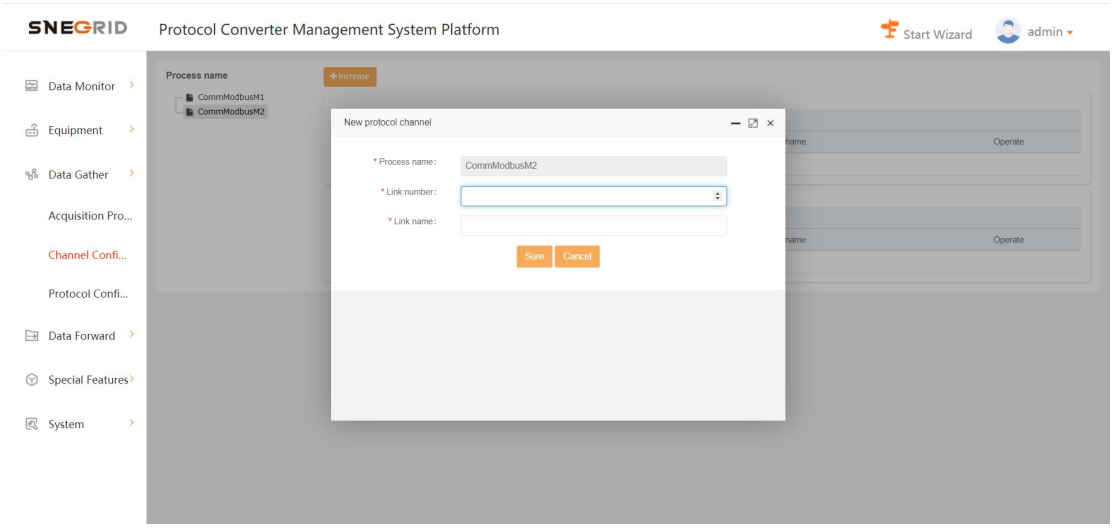

Fig. 6-19 Adding Process Configuration

Link number: link number, 0 (default)

Link name- link name: electricity meter (optional)

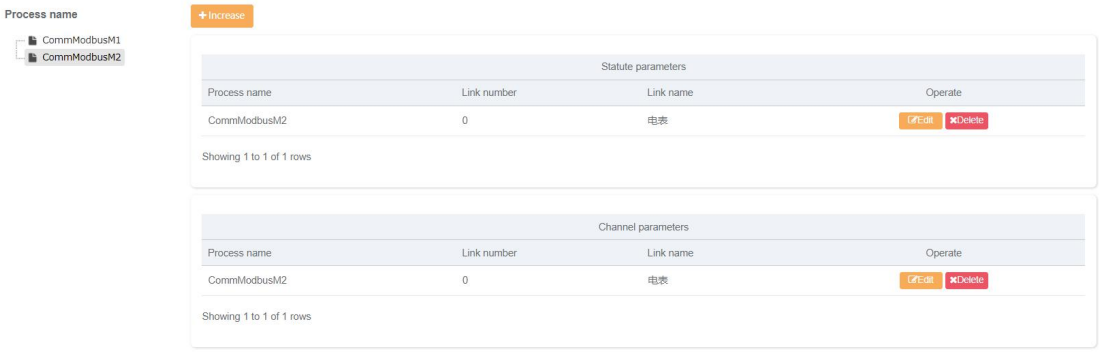

Fig. 6-20 Configuration of Process Protocol Channel

· Click Edit button in the Statute Parameters option to set the protocol parameters for our processes added.

TRANSMITMODE- transmission mode, RTU

TIMEOUT- reply timeout (ms), 3000 (default)

CALLCYCLE- call cycle interval (ms), 1000 (default)

MAXLEN- Maximum number of bytes returned, 256 (default)

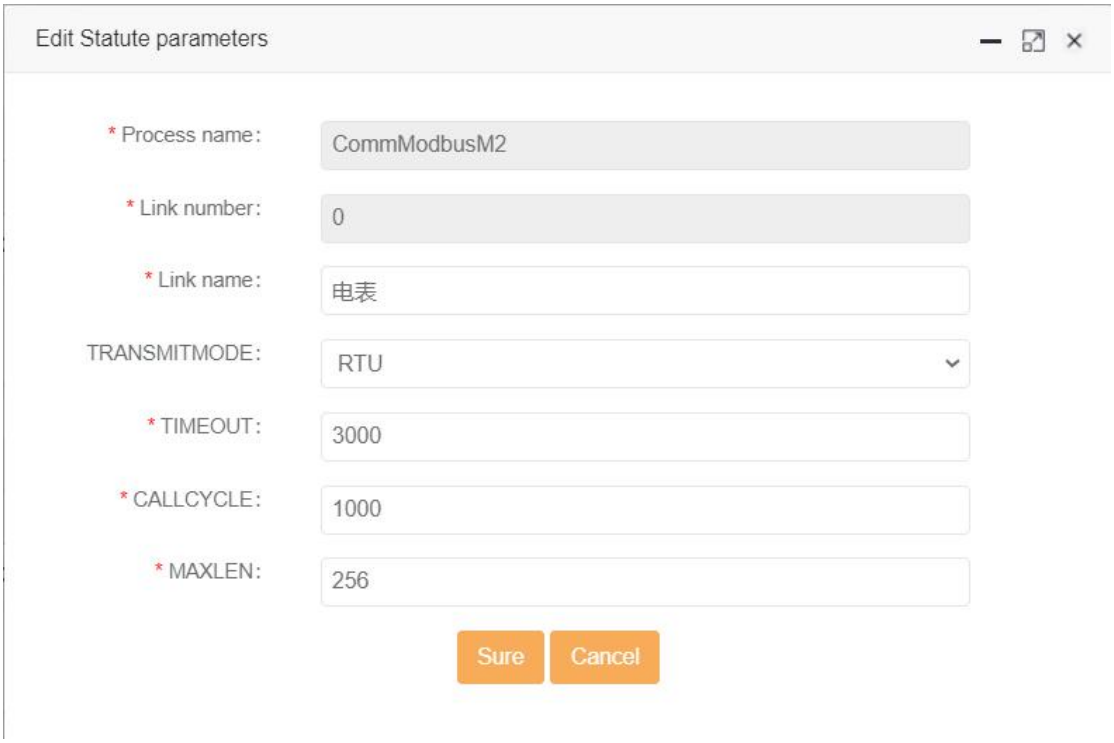

Fig. 6-21 Protocol Parameter Configuration

· Click [Edit] button in Channel Parameters option to configure the channel parameters in our processes added.

Link name- link name, electricity meter (any);

DBLCHANNEL- dual- channel identifier, 0 (default);

PORTNAME1- Serial port: Select a serial port

Band1-baud rate: 9600 (default);

Parity1-parity: None (default);

DATABITS1- data bits: 8 (default);

STOPBITS1- stop bit: 1 (default);

The rest can be left blank.

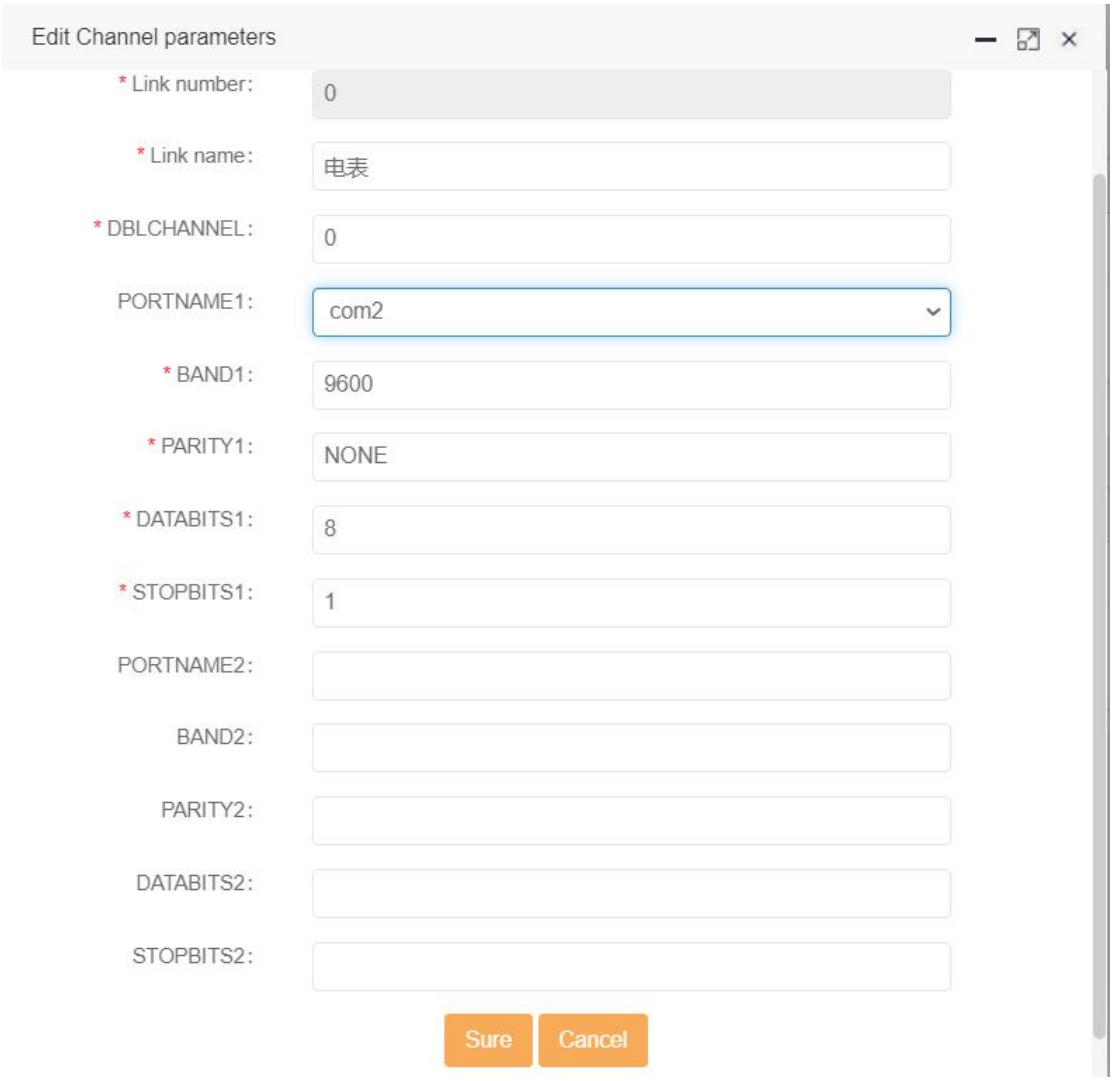

Fig. 6-22 Channel Parameter Configuration

6.5.6 Acquisition Protocol Configuration

· Click [Data Gather] - >[Protocol Configuration] button and select the process you just add and click [+Increase] button to add the protocol.

Data type- data type: including four-remote all;

Link number-link number: 0 (default);

Equipment address - slave address of device: the same as that on site.

· Click [Sure] button for automatic generation.

· The coefficients need to be modified for some collection and measurement points.

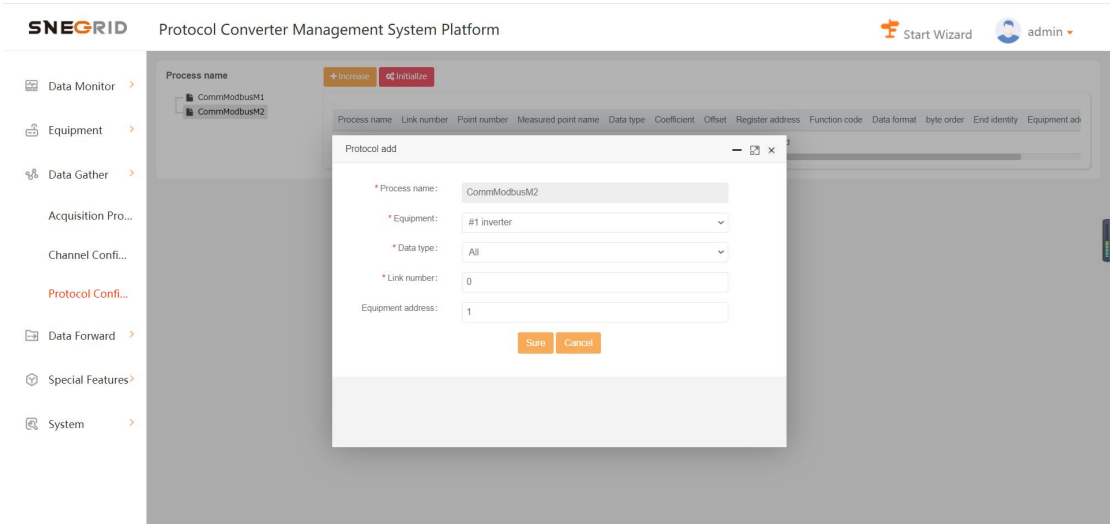

Fig. 6-23 Acquisition Protocol Configuration

6.5.7 Data Upload Setting

· Click [Special Features] ->[Collector Settings] button, select the number of devices to be collected.(This step is not required for inverters)

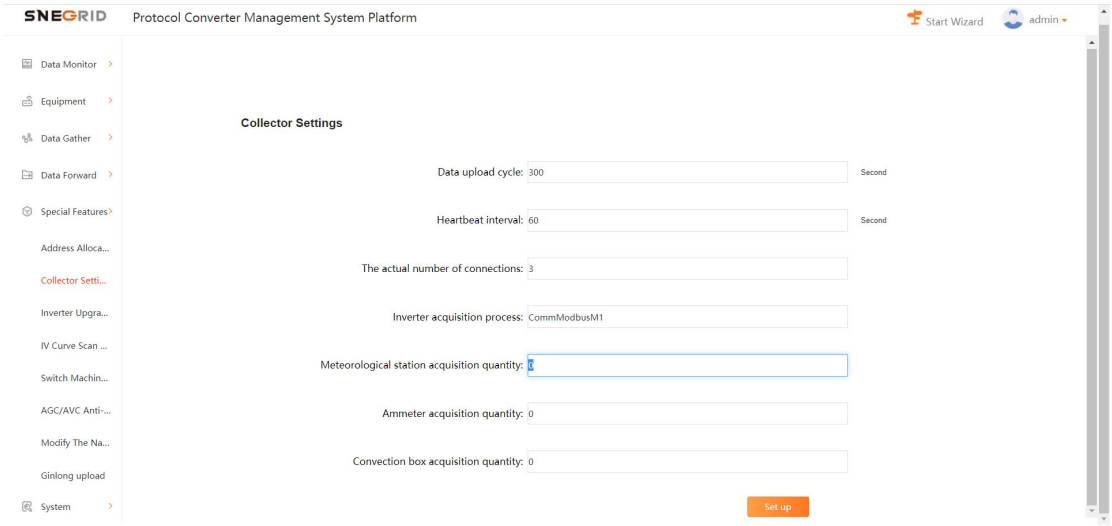

Fig. 6-24 Data Upload Setting

Data upload cycle- upload interval time: 300 seconds (default);

Heartbeat interval- heartbeat interval time: 60 seconds (default);

The actual number of connections- Number of inverter data connected: automatically synchronized;

Inverter Acquisition Process: inverter acquisition process, CommModbusM1;

Meteorological Station acquisition quantity- number of meteorological

instruments connected: consistent with the actual;

Ammeter acquisition quantity- number of ammeters connected: consistent with actual acquisition;

Convection box acquisition quantity- number of convergence boxes: consistent with actual acquisition.

6.5.8 Upload Setting of Cloud Data

Click [Special Features] - >[Ginlong Upload] button to enter the setting of uploading cloud data.(This step is not required for inverters)

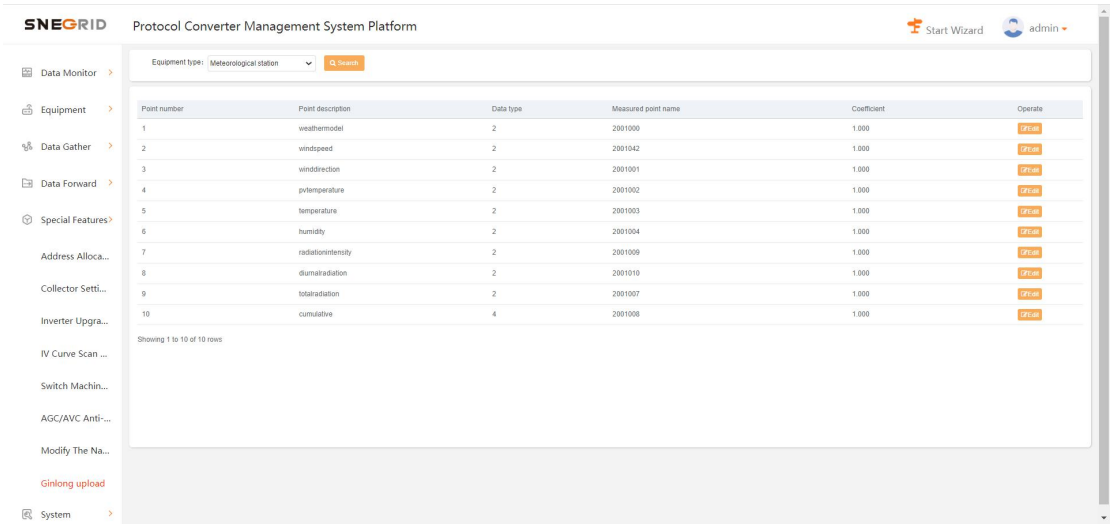

Fig. 6-25 Upload Setting of Cloud Data

· Click [Edit] button to modify the Measured Point Name and Coefficient.

Measured point name is consistent with the ID generated of the collection and measurement points.

Coe is 1 by default and you can adjust the Coe if there is any deviation.

· Click [System] - >[Recover From The Factory Set Up] to enter the backup and recovery setting interface and then click [Execute] button under Reboot option to complete the restart settings.

6.6 Special Functions

6.6.1 Address Assignment Adjustment

· See Section 6.4.3

6.6.2 Inverter Upgrade

· Click [Special Features] - >[Inverter Upgrade] button to enter the inverter upgrade interface.

· Inverter upgrade is divided into upgrade of HIMI, master DSP and slave DSP.

· Select the corresponding acquisition process, fill in the slave address and version number of RS485 corresponding to the inverter, and select the upgrade file from the local unit to upgrade the inverter.

The inverter does not work during upgrade and is restored to work after upgrade.

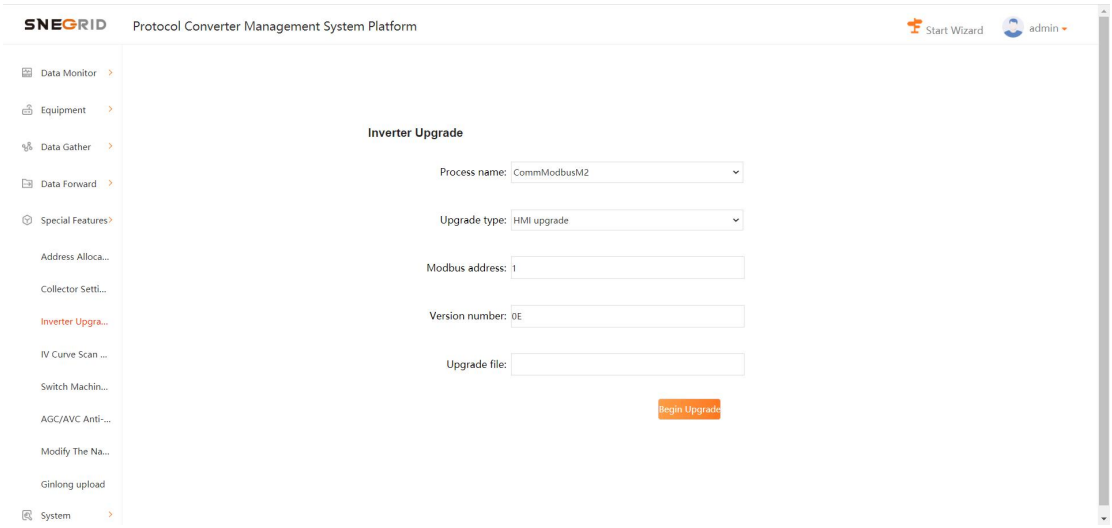

Fig. 6-26 Inverter Upgrade

6.6.2 Inverter I-V Curve Scanning Setting

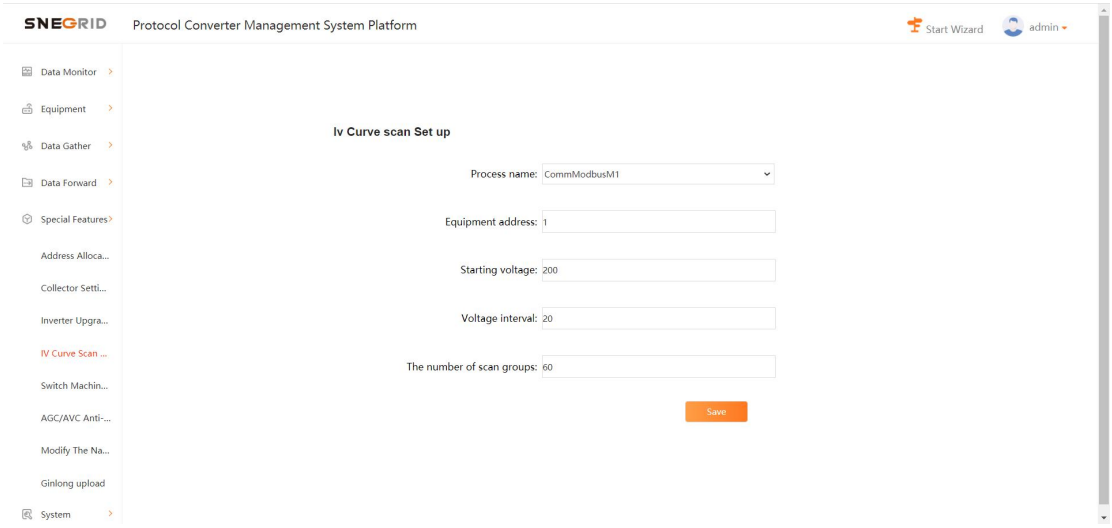

Fig. 6-27 I-V Curve Scanning Setting

· Click [Special Features] - >[I-V Curve scan Set up] to enter the I-V curve scanning setting interface of the inverter.

· Select the corresponding acquisition process and fill in the slave address, starting voltage and voltage interval of RS485 corresponding to the inverter for setting.

6.6.3 Startup &Shutdown Control of Inverter

· Click [Special Features] - >[Switch machine remote Control] button to enter the inverter startup & shutdown setting interface.

· Select the corresponding acquisition process, fill in the slave address of RS485 corresponding to the inverter and select ON/ OFF for set.

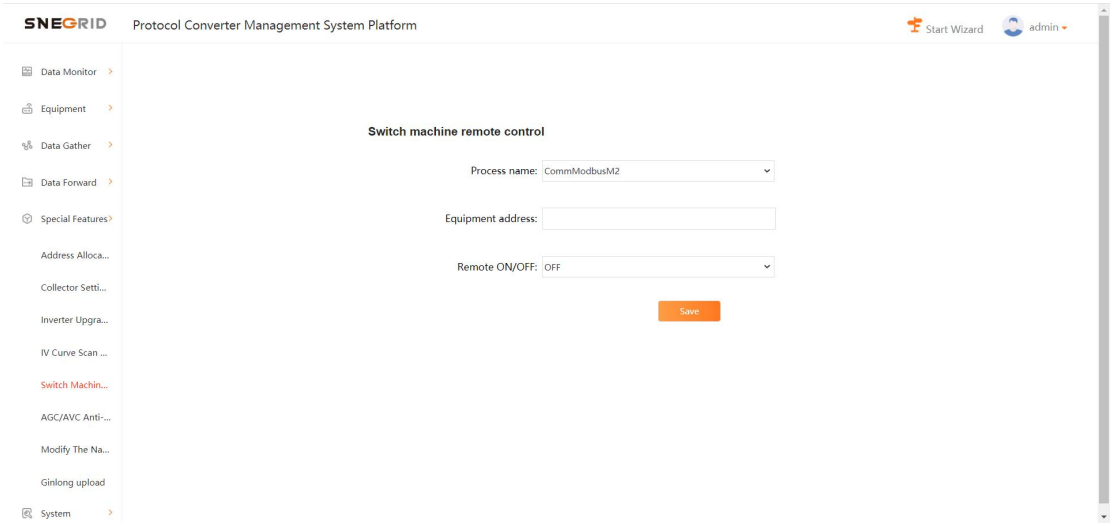

Fig. 6-28 Startup &Shutdown Setting of Inverter

6.6.4 Modifying National Standards of Inverter

· Click [Special Features] - >[Modify The National Standard] to enter the national standard modification setting interface of inverter.

· Select the corresponding acquisition process, fill in the slave address of RS485 corresponding to the inverter and select the corresponding GB for setting.

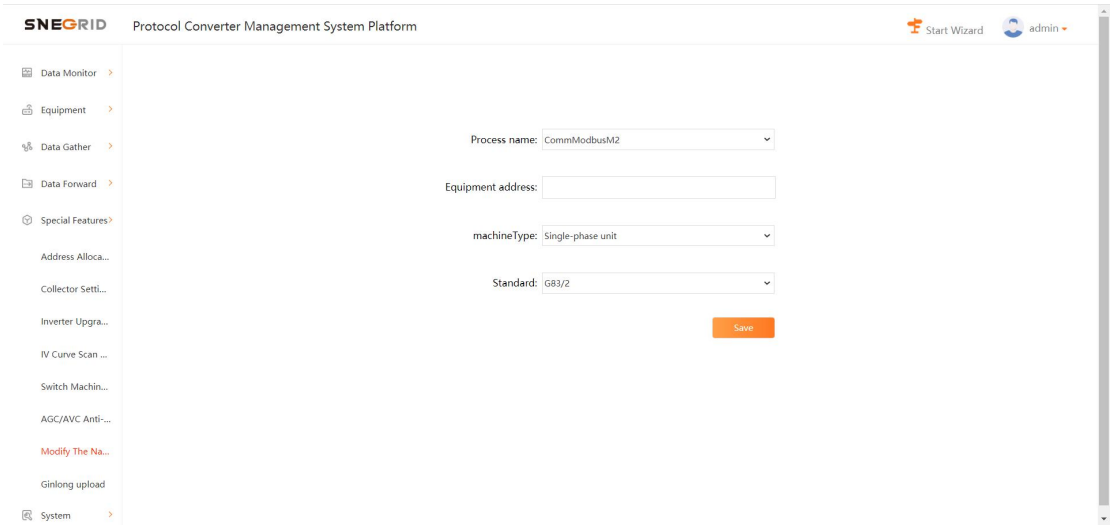

Fig. 6-29 Modifying National Standard Setting of Inverter

6.6.5 Anti-Reflux Setting

· Click [Special Features] - >[AGC/AVC anti-reflux] to enter the anti-reflux

setting interface of inverter.

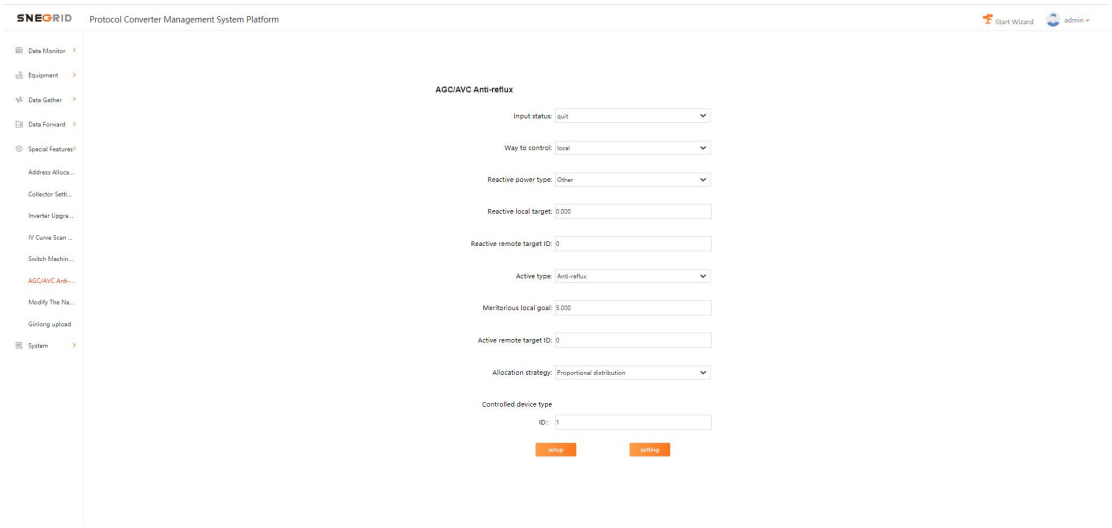

Fig. 6-30 Anti-Reflux Setting of Inverter

Input status- input status: select “Input”;

Way to Control - control mode: select “Local”;

Reactive power type- reactive power type: select “Other” (no input).

Reactive local target: reactive power target: 0 (any value if no input is required);

Reactive remote target ID: reactive remote control: 0 (any value if no input is required);

Active type- active power type: Select “Anti-reflux mode”.

Meritorious local goal- local target: This is the threshold for anti-reflux action, 0kW by default.

It is necessary to add the collection of electricity meter for anti-reflux function and it can be judged on basis of the primary active power of electricity meter. The incoming load is forward power, and PT/CT value should be taken into account during electricity meter collection configuration, as shown in Section 6.5.6.

Active remote target ID- Active remote control ID: 0

Allocation strategy- allocation strategy: allocate in equal proportions;

Controlled Device Type ID- type ID of controlled device: 1 (inverter by default), corresponding to the ID in the equipment type.

Click "Setting" and "Setup" buttons successively to start the device.

Chapter 7 Technical Specifications

Model	SNE9610-PLUS
Basic Parameters	
Dimensions	200*121*32mm
CPU	ARM Cortex-A7
Master Frequency	800MHz
Indicator Light	Running, power supply, communication and status indicator lights
Ethernet Port	Maximum optional 2-way MB ports
Serial Port	Maximum optional 8-way serial port
Working Power Supply	DC 12V
Mounting Method	Wall mounting, guide rail mounting
Communication Parameters	
Communication Mode	RS485/RJ45
Baud Rate	Adjustable, 1200 -19200bps
Pure Internet Access	WiFi/Ethernet
Operating Frequency	802.11b,g, n HT20：2412MHz~2462MHz
Antenna	Glue stick antenna/sucker antenna
Functional Parameters	
Supporting Protocols	Support ModBus, IEC60870-5-103, IEC60870-5-101, DLT645, CDT, IEC60870-5-104, IEC60870-5-102 and other customized protocols
Parameter Configuration	Support upper computer parameter configuration and remote parameter configuration
Data Storage	Support data storage for a long time and breakpoint resuming function
Matching Equipment	Inverter, convergence box, box transformer, environmental meteorological instrument, etc.
Special Function	Inverter address allocation, I-V curve scanning, AGC/AVC function, etc.
Working Conditions	
Operating Temperature	-30℃~+85℃
Storage Temperature	-40℃~+90℃
Environment Humidity	≤85%RH, no condensation

IP Protection Grade	IP20

Chapter 8 Contact Us

・Company Name: SNEGRID Power Technology Co., Ltd.

・Company Address: Intersection of Xinfa North Road and Yihu Avenue, Yangcun Industrial Park, Tianchang City, Anhui Province, China

・Tel.: 0551-65550976

・Fax: 0551-65550976

・Official Website: www.snesolar.com

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user ’s authority to operate the equipment.

To comply with FCC's RF radiation exposure limits for general population/ uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter