JSY1041

IP PDU Manuals

Contents

Chapter 1   Prolegomenon

Professional-grade network remote monitoring and management of power distribution system, the latest scientific research results obtained after years of intensive research in the field of power distribution technology. According to the development trend of the world's future power distribution monitoring and management technology, combined with the technical needs of the modern data center application environment, the product adopts the latest core technology with completely independent intellectual property rights, and network communication, power distribution, energy measurement and other technologies in one and carefully designed the latest network remote monitoring and management power distributor.

This device references the following standards:

Q/GDW 1354-2013 "Functional specification for smart energy meters".

GB/T 17626.2-1998 Electromagnetic compatibility test and measurement technique electrostatic discharge immunity test.

GB/T 17626.3-1998 Electromagnetic compatibility test and measurement technique RF electromagnetic field radiation immunity test.

GB/T 17626.4-1998 Electromagnetic compatibility test and measurement technique: Electrical fast transient burst immunity test.

GB/T 17626.5-1998 Electromagnetic compatibility test and measurement technique surge (shock) immunity test.

GB/T 17626.8-1998 Electromagnetic compatibility test and measurement technique power frequency magnetic field immunity test.

MODBUS-RTU communication protocol.

Chapter 2   Technical Data And Indicators

2.1.   Work metrics

- AC 250V/60A 50Hz.

2.2.   Metrics

- Measurement range: 0 ~ 999999.9 kWh.
- Measurement accuracy: class 1.

2.3.   Measurement accuracy

- Voltage accuracy: 0.5 level.
- Current accuracy: Class 1.
- Active: class 1 (reference frequency 50Hz).

2.4.   Operating environment

- Operating temperature range: -20 ℃~60 ℃.
- Limit operating temperature range: -30 ℃~70 ℃.
- Storage and transportation limit temperature: -40 ℃ ~ 70 ℃.
- Relative humidity: <75% (annual average).

2.5.   Electromagnetic compatibility

- Electrostatic immunity: contact discharge 4kV Air discharge 8kV.
- Fast burst immunity: power supply 2kV/4kV.
- Surge immunity: 2 kV power supply.

2.6.   Socket split closing performance

- Load resistivity: 16A AC 250V.
- Maximum switching voltage: AC 440V.
- Maximum switching current: 16A.
- Maximum switching power: 3000VA.
- Mechanical durability: 1×10^6 times

- Electrical durability: 5000 times (16A, AC 250V, resistive load, room temperature, 1S through9S off).

Chapter 3   Main Features

3.1.   Real-time monitoring capabilities

The total load current, total voltage, total power, total energy, power factor, and load current of each independent unit can be viewed through the LCD display interface and buttons; The web page shows what the LCD displays as well as the closed/disconnected status, temperature/humidity sensor data, and operating status of each individual unit.

3.2.   Custom alarms

The total load current/voltage threshold is customizable and the temperature/humidity threshold is customizable.

3.3.   Master-slave (cascade) setup

Setthe master and slave status on the system information interface, if the current host, the corresponding position of the LCD display displays "master", if the current slave, the fixed position displays "slave".

Only as a host can read the slave information, and there can be no duplicate addresses in the hierarchical networking, otherwise communication abnormalities will occur.

1 Cascading method:
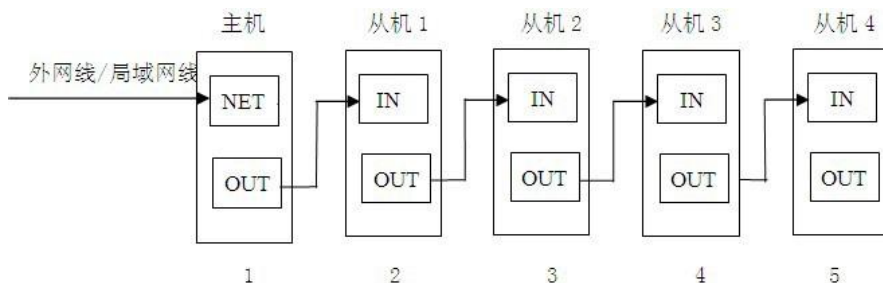
Serial cascade connection diagram:

Fig. 3-7-1

Set up one host, the other is a slave, up to 24 cascades, including a total of 25 devices of the host.

2 Cascade action method:

a) As shown in the serial cascade connection diagram, connect one end of the

cascade connection line to the host RS485 interface, one end to the RS485

interface of the slave, and then use a cascade connection line from the RS485

interface of the current slave to connect the RS485 of the next slave interface,

connect each slave in turn, cascade 24 devices, as shown in Figure 3-7-1 above;

Fig. 3-7-2

b) Log in to the host system through the web browser or other management system of the PC, you can monitor and control the device, and the cascade is successful.

3.4.   Access method

Support web access mode, through IE, Google, 360 and other browsers login access control.

3.5.   Upgrade features

Software upgrades are supported. Provide secondary development interface SNMP（V1/V2c）。

Chapter 4　　Install The Wiring

4.1.　Safe way

Vertical fixed installation.

4.2.　Terminal definition

1　Cascaded RS485 and LINK interfaces
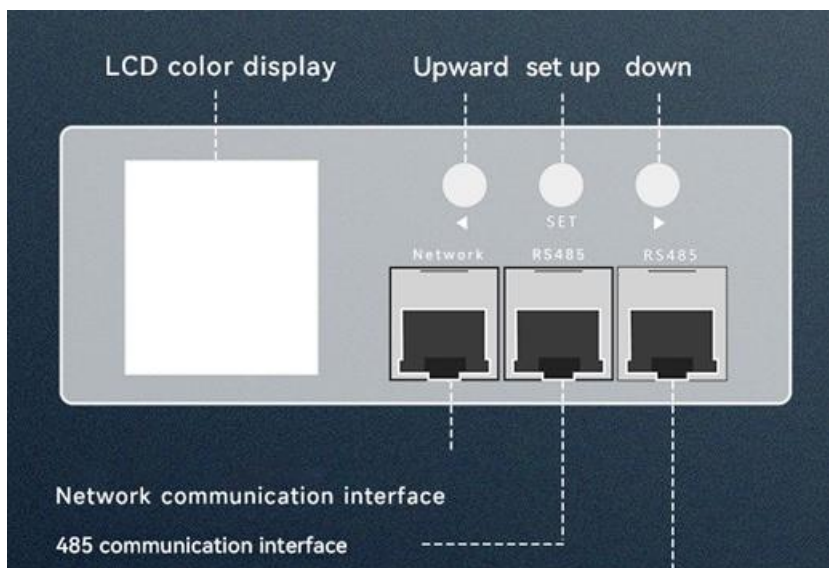
RJ45 Port：4：RS485-A；5：RS485-B：7/8：GND: Reserved.

2　Temperature and humidity T/H-1 interface

RJ11 interface: 2: RS485-A; 3：RS485-B；4: 5V power supply+; 1/5: 5V power supply –

Chapter 5　　Use & Operation

5.1.　Panel display

Panel Description:

1 Display area: LCD color screen display (with backlight).

2 □ Key: flip up the key, short press to switch to the previous page.

3 □ Key: flip down the button, short press to switch to the next page.

4 SET key: set key, short press to confirm.

5 EXT interface: interface type RJ11, temperature and humidity acquisition interface.

6 NET interface: interface type RJ45, Ethernet communication interface, yellow light flashes during data transmission, green light when the network cable is normally connected.

7 RS485 interface: interface type R J45, RS485 communication interface, can cascade RS485 header.

5.2.   Display features

5.2.1.   Device system initialization

When the device is powered on, the LCD screen lights up and displays the following information:

```
2022-03-01 12:13:14

    ◇ MasterInfo

       PDU  Info

       SensorInfo

       SystemInfo

  [Up]      [Enter]     [Down]
```

Note: The screen shows the total voltage, total current, total active power, and total active energy of the PDU.

5.2.2.   The main interface of the device system

Return to the main interface by pressing the up button to display the following information:

```
2022-03-01 12:13:14

◇ MasterInfo

   PDU   Info

   SensorInfo

   SystemInfo

[Up]      [Enter]      [Down]
```

5.2.3. Host information

Use the middle setting key to determine the host information, and the display information is as follows:

```
     2022-03-01 12:13:14

U        220.01V

I        220.01A

P        220W

EP       220.001kWh

[Back]            [Next]
```

```
     2022-03-01 12:13:14

Hard     1.00

Soft     1.00

SN       2109010001

IP       192.168.1.23

[Back]            [Next]
```

```
          2022-03-01 12:13:14

User
                  admin
Password
              123456789

[Back]                    [Next]
```
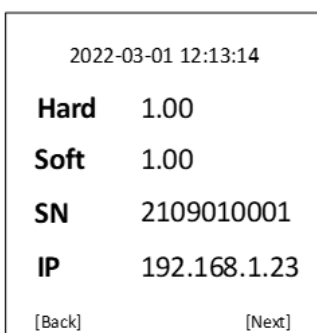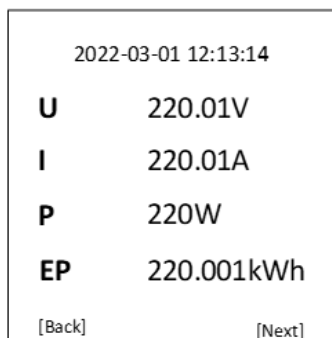
The first screen displays the total voltage, total current, total active power, and total active energy of PDU.

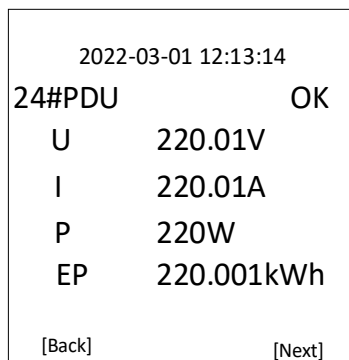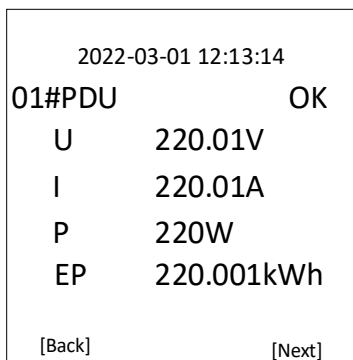The second screen displays the P DU hardware version number, software version number, SN code, and automatically obtained IP address.

The third screen displays the login account and password of the WEB page (default account admin, password 123456789).

5.2.4.   PDU information

In the main interface, the middle setting key determines the entry PDU information, and the information is displayed as follows:

```
      2022-03-01 12:13:14          2022-03-01 12:13:14
01#PDU              OK        24#PDU              OK
   U       220.01V               U       220.01V
   I       220.01A               I       220.01A
   P       220W                  P       220W
   EP      220.001kWh            EP      220.001kWh

[Back]                          [Back]
            [Next]                          [Next]
```

The display content is the voltage, current, active power, and electrical energy of 1-

24 slaves, and the next page is turned down by pressing down; When the slave communication is normal, the page displays OK and the communication abnormality displays ERR.

5.2.5. Temperature and humidity information

In the main interface, the middle setting key determines the entry PDU information, and the information is displayed as follows:
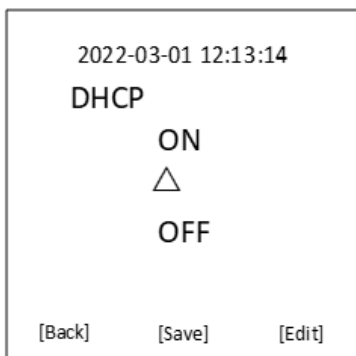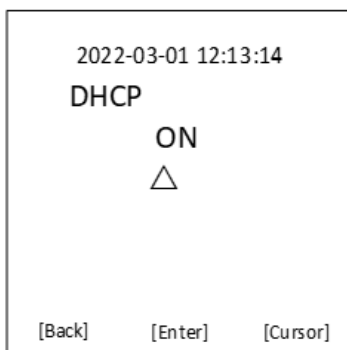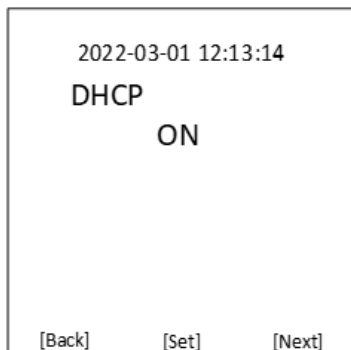
```
┌─────────────────────────┐   ┌─────────────────────────┐
│   2022-03-01 12:13:14   │   │   2022-03-01 12:13:14   │
│ 01#Sensor      Offline  │   │ 04#Sensor      Offline  │
│  Temperature  0.00°C    │   │  Temperature  0.00°C    │
│  Humidity     0.00%     │   │  Humidity     0.00%     │
│                         │   │                         │
│                         │   │                         │
│  [Back]        [Next]   │   │  [Back]        [Next]   │
└─────────────────────────┘   └─────────────────────────┘
```

The display content is 1-4 channels of temperature and humidity content, the communication is displayed as online normally, and the communication is displayed as offline if the communication is abnormal.

5.2.6. System information

In the main interface, use the middle setting key to determine the system information, and the information displayed is as follows:

```
┌─────────────────────────┐   ┌─────────────────────────┐
│   2022-03-01 12:13:14   │   │   2022-03-01 12:13:14   │
│  DHCP                   │   │  DHCP                   │
│         ON              │   │         ON              │
│                         │   │         △               │
│                         │   │                         │
│                         │   │                         │
│ [Back]    [Set]  [Next] │   │ [Back]   [Enter] [Cursor]│
└─────────────────────────┘   └─────────────────────────┘
```

```
┌─────────────────────────┐
│   2022-03-01 12:13:14   │
│  DHCP                   │
│         ON              │
│         △               │
│         OFF             │
│                         │
│ [Back]   [Save]  [Edit] │
└─────────────────────────┘
```
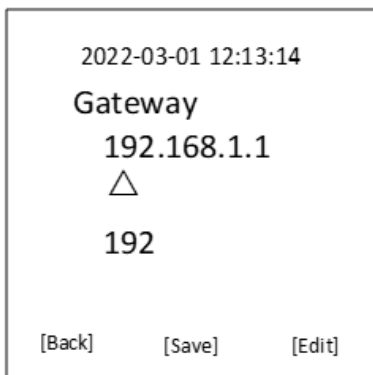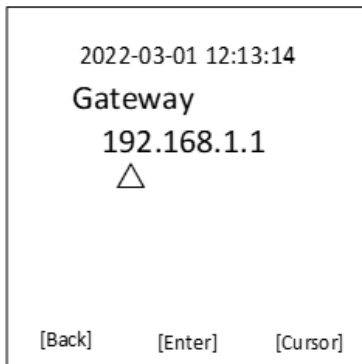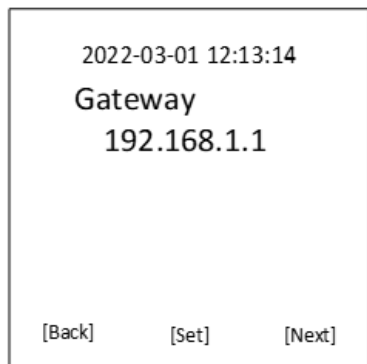
The first screen is the setting interface for automatic acquisition of Iand P addresses, O N means automatic acquisition, O FF means automatic acquisition is turned off; By pressing the set key, a triangle cursor appears—the setting key is selected—the down arrow keys edit the state you want to select, and then click set.
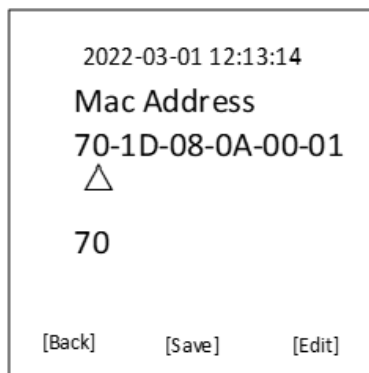
```
2022-03-01 12:13:14
IP Address
      192.168.1.112




[Back]        [Set]        [Next]
```

```
2022-03-01 12:13:14
IP Address
      192.168.1.112
            △



[Back]        [Enter]      [Cursor]
```

```
2022-03-01 12:13:14
IP Address
      192.168.1.112
            △

    192

[Back]        [Save]        [Edit]
```
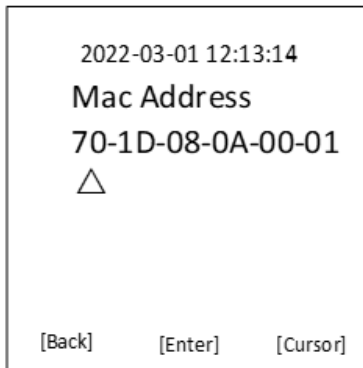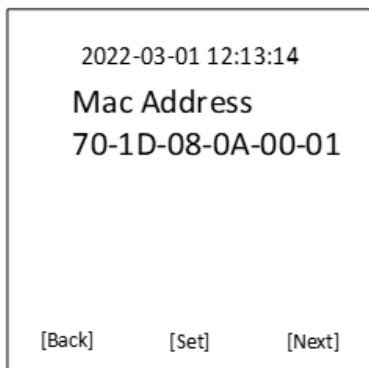
The second screen is the IP address interface, you can set the parameters by pressing the setting key, you can press the down button to move the triangle cursor to move the position when entering the setting state, increase the number by pressing the down button when setting the number, and press the setting to save after setting.

```
 2022-03-01 12:13:14          2022-03-01 12:13:14

 Sub Mask                     Sub Mask
    255.255.255.255              255.255.255.255
                                       △



 [Back]    [Set]    [Next]    [Back]    [Enter]   [Cursor]
```

```
 2022-03-01 12:13:14

 Sub Mask
    255.255.255.255
           △
 255

 [Back]    [Save]    [Edit]
```
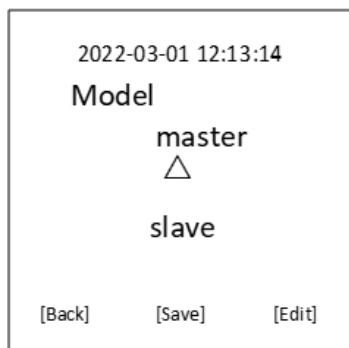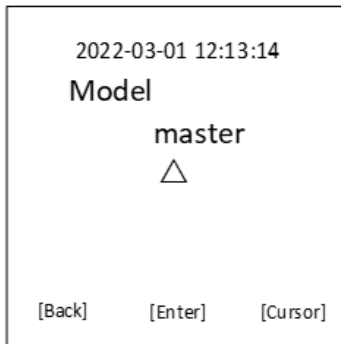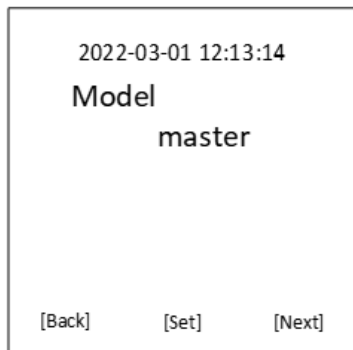
The third screen is the subnet mask interface, you can set the parameters by pressing the setting key, you can press the down button to move the triangle cursor to move the position when entering the setting state, increase the number by pressing the down button when setting the number, and press the setting to save after setting.

```
2022-03-01 12:13:14
    Gateway
        192.168.1.1




[Back]        [Set]        [Next]
```

```
2022-03-01 12:13:14
    Gateway
        192.168.1.1
            △

[Back]       [Enter]      [Cursor]
```

```
2022-03-01 12:13:14
    Gateway
        192.168.1.1
            △

        192

[Back]        [Save]        [Edit]
```
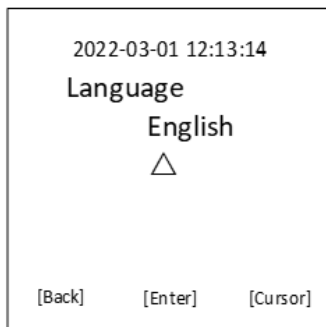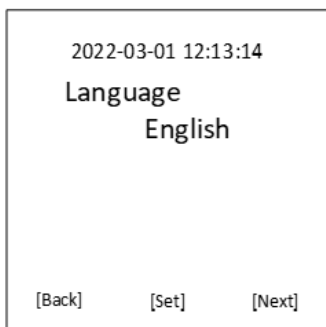
The fourth screen is the default gateway, you can set the parameters by pressing the setting key, you can press the down button to move the triangle cursor to move the position when entering the setting state, increase the number by pressing the down button when setting the number, and press the setting to save after setting.

2022-03-01 12:13:14

Mac Address

70-1D-08-0A-00-01

[Back]   [Set]   [Next]

2022-03-01 12:13:14

Mac Address

70-1D-08-0A-00-01
△

[Back]   [Enter]   [Cursor]

2022-03-01 12:13:14

Mac Address

70-1D-08-0A-00-01
△

70

[Back]   [Save]   [Edit]

The fifth screen is the MAC address, you can set the parameters by pressing the setting key, you can press the down button to move the triangle cursor to move the position when entering the setting state, increase the number by pressing the down button when setting the number, and press the setting to save after setting.

```
2022-03-01 12:13:14
Model
        master



[Back]      [Set]      [Next]
```

```
2022-03-01 12:13:14
Model
        master
         △


[Back]    [Enter]    [Cursor]
```

```
2022-03-01 12:13:14
Model
        master
         △
        slave
[Back]    [Save]    [Edit]
```
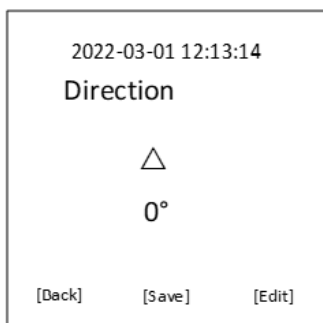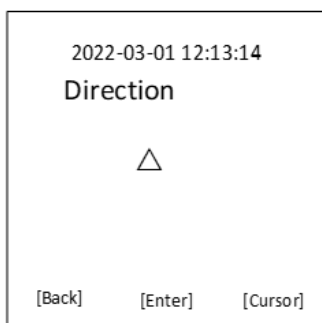
The sixth screen is PDU host RS485 mode, the mode is divided into master and slave mode, by pressing the set key appears triangular cursor - set key to select - Scroll down to edit the status you want to choose, then click Settings.

```
2022-03-01 12:13:14
Language
        English



[Back]    [Set]    [Next]
```

```
2022-03-01 12:13:14
Language
        English
         △


[Back]    [Enter]    [Cursor]
```

2022-03-01 12:13:14

Language

English

△

中文

[Back]   [Save]   [Edit]

The seventh screen is PDU display language, the language is divided into Chinese and English, by pressing the setting key to appear a triangle cursor - set key to select - down arrow to edit the state to be selected and then click set.

2022-03-01 12:13:14

Direction

[Back]   [Set]   [Next]

2022-03-01 12:13:14

Direction

△

[Back]   [Enter]   [Cursor]

2022-03-01 12:13:14

Direction

△

0°

[Back]   [Save]   [Edit]

The eighth screen is the direction of PDU LCD display, and the angle can be

switched to 0 degrees, 90 degrees, 180 degrees, 270 degrees, By pressing the set key, a triangle cursor appears—the setting key is selected—the down arrow keys edit the state you want to select, and then click set.

5.3.   WEB Instructions for use

5.3.1.   Login screen

Open a browser and enter the correct device IP address in the address bar, and the user login window will pop up, as shown in Figure 5-3-1-1
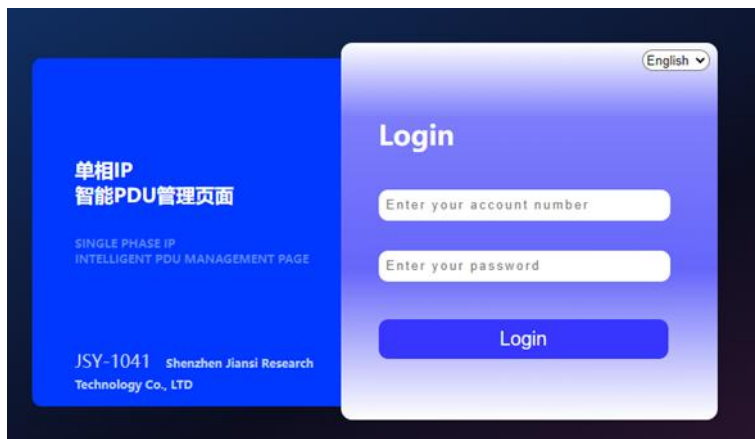
Fig. 5-3-1-1

5.3.2.   Main interface

The user name and password are verified (system default username/password: admin/123456789), and after successfully logging into the system, the figure is shown in Fig. 5-3-2-1 (current retains 2 decimal places, voltage retains 2 decimal places).

Fig . 5-3-2-1

The main interface is mainly composed of three parts: main menu bar, status information;

Main menu: including PDU logo, navigation function menu;

Status information: mainly temperature and humidity information, slave/fraction relay status and voltage, current, power, power factors, electric energy, PDU voltage, total current, total power and other information.

5.3.3.　Device monitoring

5.3.3.1.　The host enters power information

1. Set the current and voltage threshold of each phase, enter the threshold value to be set in the input box, click the setting button, and the setting is successful.

2. When the actual voltage or current exceeds the set threshold, an alarm message and alarm sound will be generated.

Figure 5-3-3-1

5.3.3.2. Temperature and humidity monitoring

Fig . 5-3-3-2

Real-time monitoring of ambient temperature and humidity, data update frequency is 1 time per second, up to 4 channels.

5.3.3.3. Host power input alarm

Fig . 5-3-3-3

The display contents are: overvoltage warning, undervoltage warning, overcurrent warning, warning threshold can be set, green "normal" when the measured value is within the threshold range, and red "warning" when the measured value exceeds the threshold

5.3.3.4. Slave information/quantile information

Fig. 5-3-3-4

Slave information: display slave online status, voltage, current, active power, power factor, electric energy, up to 24 slaves.

Fractional information: display the relay switching status, voltage, current, active power, power factor, and energy of each bit of P DU, each bit can be controlled separately, and the maximum expansion is 24 bits.

5.3.4. Harmonic analysis
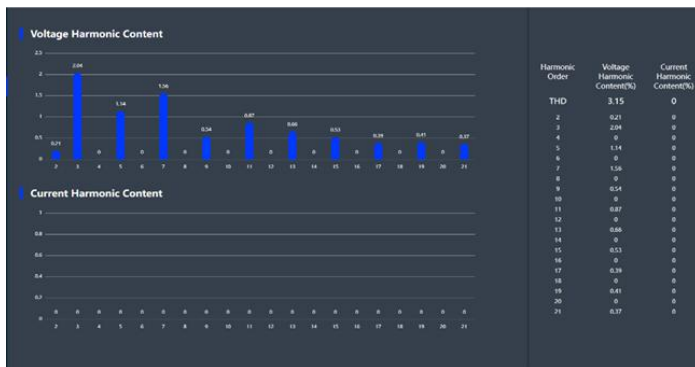
Fig. 5-3-4-1

Voltage harmonic content: the number of harmonics measured is 2-21 times, and THD is the total distortion rate of voltage harmonics.

Current harmonic content: the number of harmonics measured is 2-21 times, and THD is the total distortion rate of current harmonics.

5.3.5. Device information

5.3.5.1. Basic host information
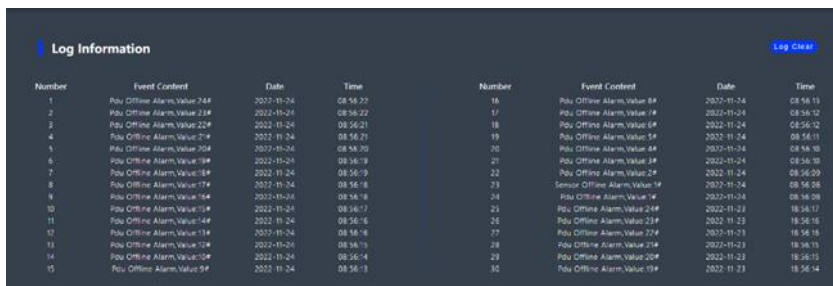
Fig. 5-3-5-1-1

The basic information of the host includes: CPU frequency, memory information,

flash information, software version, hardware version, network information, MAC address, SN code.

5.3.5.2. Log information

Fig. 5-3-5-2-2

The log information includes: slave/fractional module offline alarm, overvoltage alarm, overcurrent alarm, temperature and humidity offline alarm, the information content is composed of serial number-event content-date-time, and up to 3 0 alarm information is stored , the latest alarm information will overwrite the first information.

5.3.6.   Network settings
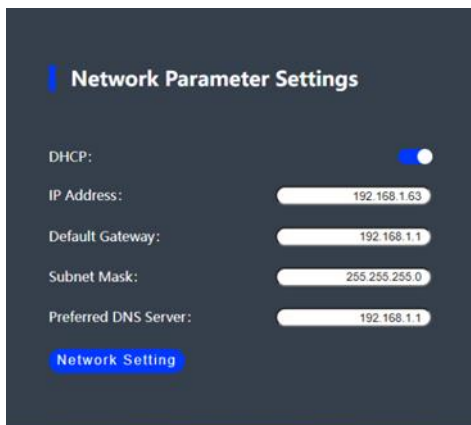## 5.3.6.1.   Network parameter settings

Fig. 5-3-6-1

Network parameter setting: Select mode: You can choose to set the mode manually, fill in the information below, and automatically obtain the mode and WIFI mode.

Manual settings, for example:

IP address: 192.168.1.192 (default factory IP address).

Subnet mask: 255.255.255.0 Gateway: 192.168.1.1

DNS address: The default DNS1 is 192.168.1.1, enter the correct DNS address to ensure that the email is sent normally.

Note: After the network configuration information is modified, you need to restart the system to take effect.

Automatic acquisition:

"Select Mode" When selecting the "Auto Get" mode, click the "Save" button to restart the device system, and the IP address will be automatically obtained according to the routing settings in the LAN where the device is located, and the IP address can be viewed through the device LCD screen.

Note: After the network configuration information is modified, you need to restart the system to take effect.

5.3.6.2. SNMP parameter settings

Fig. 5-3-6-2

SNMP V1/V2C settings: SNMP v1 and v2c need to set up community and set community, which defaults public and private, which can be modified according to the actual usage of the user; Set the Trap objective and enter the SNMP management platform address in the Trap Address input box Trap information is automatically sent to the corresponding address, and a total of 2 trap addresses can be set.

SNMP (Simple Network Management Protocol) Simple Network Management Protocol, this software supports V1, V2c versions of SNMP, the attachment provides a MIB file, The MIB file contains a company enterprise number, and the network management system manages the device through the SNMP protocol, which can view the status information of the device and sensors, and receive alarm information. After you complete the SNMP settings, you need to install the corresponding SNMP management software.

5.3.6.3. SMTP settings

Fig. 5-3-6-3

Correctly configure the SMTP service related parameters, correctly fill in the user's SMTP account, password (the password is the authorization code of the account), SMTP server address, and port, and click "SMTP" Settings button.

Fill in the test email address in the input box of "Receiving Account" corresponding to "SMTP Test", click the "Test" button to view the test email, if you receive the test email, the SMTP setting is successful, otherwise, please reset or check whether the network is normal.

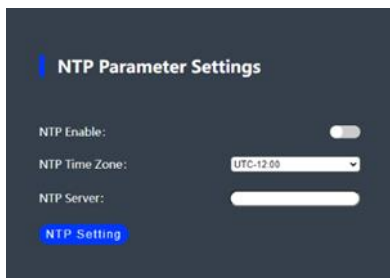### 5.3.6.4.　NTP parameter settings

Fig. 5-3-6-4

NTP Settings: You can click the NTP Enable switch to enable or disable NTP services. Enable: Set to fill in the NTP server, and NTP time zone, click the NTP setting button, the device will obtain the time and date of the current selected time zone in the

network according to the NTP server and time zone filled in by the user, and update the device system time (every Automatic synchronization every 30 minutes).

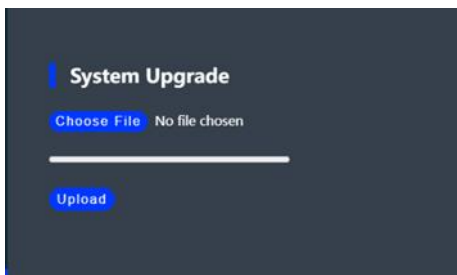### 5.3.7. System settings

5.3.7.1. System upgrade

Fig. 5-3-7-1

When upgrading, click the "Choose File" button and select XXX bin file, click the "Upload Modification" button to confirm the upgrade, and the PDU will automatically restart after the upgrade is completed.
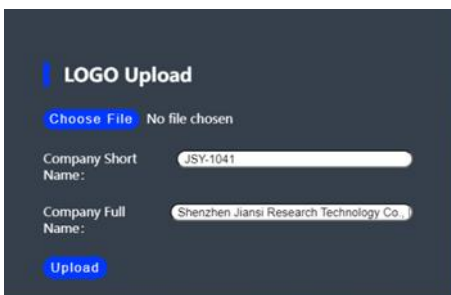
5.3.7.2. LOGO upload

Fig. 5-3-7-2

The LOGO, company abbreviation and full name of the company of the WEB page can be changed according to needs, the LOGO upload size is 200*100 pixels, the company abbreviation needs to be filled in English, the full name of the company fills in the Chinese, after filling in, click "Upload and Modify" to confirm.
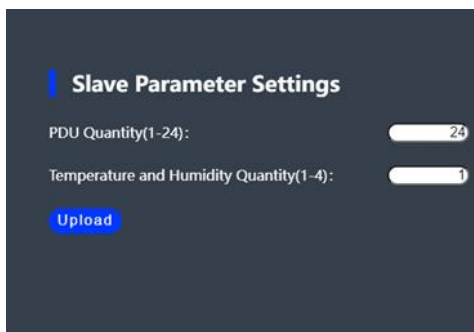
5.3.7.3. Slave parameter settings

Fig. 5-3-7-3

The number of PDU slave/fractional monitoring can be set from 1-24 The number of temperature and humidity monitoring can be set, the setting range is 1-4, click "Upload and Modify" after determining the quantity
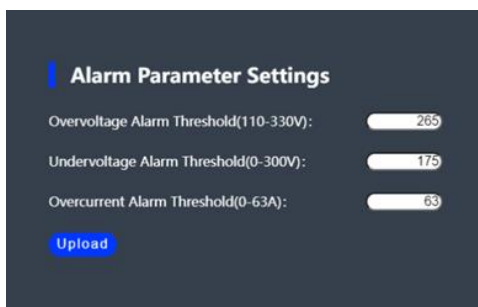
5.3.7.4. Alarm parameter settings

Fig. 5-3-7-4

The alarm content is overvoltage, undervoltage, and overcurrent; Overvoltage threshold range 110-300VAC, default 265V; Undervoltage alarm threshold range 0-300VAC, default 175V; The threshold range of overcurrent alarm is 0-63A, the default is 63A (the threshold is filled in integer), and click the "Upload and Modify" button to confirm after filling in.

5.3.7.5. Synchronize time

Fig.5-3-7-5

The PDU clock can manually synchronize the computer time, click the "Synchronize Time" button to synchronize the clock of the PDU and the computer.

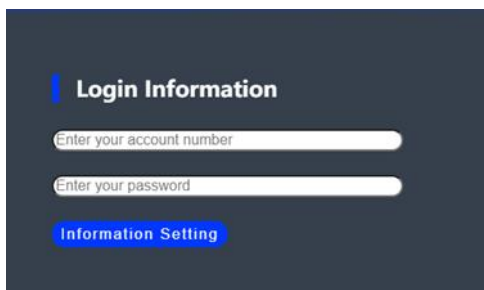### 5.3.7.6. Login information

Fig. 5-3-7-6

The default login account of the WEB page of the PDU is admin and the password is 123456789, you can set the account password according to your actual needs, click "Information Settings" to confirm after filling in, and refresh it after confirmation W EB page or close the WEB page to log back in.

Chapter 6   frequently asked questions

1、 Forgot your device IP address? Solution: Turn the page and the IP address of the device will be displayed on the display.

2、 Email delivery unsuccessful? Solution:

a) Check and make sure that the device is connected to the network and that the network is working properly;

b) Check if the DNS settings are correct;

c) Check and make sure that the SMTP server is filled in correctly, consistent with the sender's mailbox server, and the SMTP port is correct;

d) Make sure the recipient's permissions are set correctly.

Chapter 7   Transportation and storage

1. The product should not be subjected to severe impact during transportation and unpacking, and transported and stored in accordance with the provisions of the national standard GB/T13384-2008 "General Technical Conditions for Packaging of Mechanical and Electrical Products".

2. This product is an electronic device, so when handling, taking and placing should try to avoid heavy objects impact and bumping.

3. The ambient temperature of the storage site should be -40~+70 ℃, the relative humidity should not exceed 85%, and the air should not contain corrosive harmful substances.

Chapter 8   Product warranty and service

1. The product implements "three guarantees" service:

The warranty period is   12 months after the product is powered on   or 18 months after receiving the goods, and damage caused by man-made and force majeure is not covered by the warranty. Once the product is sold, it is maintained for life.

2. Consulting services:

Answers will be given within 2 hours of user consultation , and necessary technical support can be provided according to user needs. If the product fails, if necessary, a special person will be sent to the site to solve it until the user is satisfied.

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