Eaton PDU

Management operation instructions

Powering Business Worldwide

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About this manual

Thank you for choosing our power distribution unit (PDU).

This manual mainly introduces how to conduct software management and operation of PDU. As for the opening of the equipment and the connection, see PDU INSTALLATION MANUAL (downloaded from www.eaton.com).

This manual is developed for the FlexPDU G2 series PDUs.

NOTE

The web UI may vary with versions. The web UI actually displayed shall prevail.

Conventions

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

Symbol	Definition
NOTE	Information notes call attention to important features or instructions. Ignoring this type of note may result in ineffective configuration, loss of data or damage to device.

Change history

Release date	Description
2025-03-03	First release.
2026-1-20	Update acc. to new FW.

Contents

1 Introduction 1

2 Default network user and password 2

3 Use PDU management page 3

3.1 Connect to network 3

3.2 Login 5

3.3 Management page introduction 6

3.4 Page screensaver and refresh 8

3.5 Shortcut page – Favorites 9

3.5.1 Tool page 9

3.5.2 Hosts page 9

3.5.3 INFO page 12

3.6 Power page – PDU 13

3.6.1 View/Set the PDU input 13

3.6.2 View/Set the input phase 13

3.7 Socket page – Outlets 15

3.7.1 View and set outlets 15

3.7.2 Outlet groups 16

3.7.3 View outlet details 16

3.7.4 Set outlet names and communication addresses 17

3.8 Sensor page – Sensors 18

3.8.1 View sensor info and set sensor alarm thresholds 18

3.8.2 View sensor events 18

3.8.3 Set sensor parameters 19

3.9 Grouping page – Groups 20

3.9.1 Group management 20

3.9.2 Group configuration 21

3.10 Current alarm page – Alarms 25

3.11 Log page– Logs 26

3.11.1 View/Clear history alarm logs 26

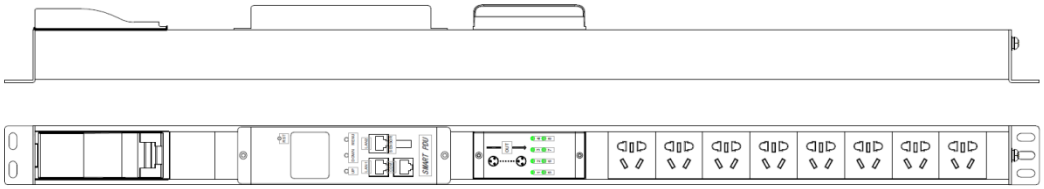
3.11.2 Download system operations logs 26
3.12 System page – System 27
3.12.1 Set network parameters 27
3.12.2 Enable/Disable network services 28
3.12.3 System settings 31
3.12.4 Backup and Restore 33
3.12.5 User settings 33
3.12.6 Schedule settings 35
3.12.7 Upgrade 38
3.12.8 Import a CA certificate 38
3.12.9 View/Modify system information 39
4 Use the PDU LCD panel 40
4.1 Welcome page and monitoring information page 41
4.2 Menu 42
5 Use the command line to manage the PDU 45
5.1 Connect to Telnet 45
5.2 Connect to SSH 47
5.3 Regular instruction for command line 49
5.4 Command instructions 50
5.4.1 Help command 50
5.4.2 Find and view object attributes 51
5.4.3 Read object data 52
5.4.4 Set object data 52
5.4.5 Synchronize object attributes 53
5.4.6 Use object names and serial numbers 53
5.4.7 Use a dot to indicate the last used object 54
5.5 Instructions for PDU management objects 55
6 Use SNMP to manage the PDU 61
6.1 Connect to SNMP 61
6.2 Set connection parameters 64

6.3 Example: Read and set management objects 66
6.3.1 Read the IP address 66
6.3.2 Read outlet current 66
6.3.3 Set outlet switches 67
7 Use the serial port terminal to manage the PDU 69
7.1 Physical port 69
7.2 Obtain PDU's communication address 70
7.3 Modbus parameter addresses 71

1 Introduction

The FlexPDU G2 series PDUs can be installed horizontally or vertically.

The following figure shows a vertical PDU with eight switches as an example. For the appearance of other PDUs, please refer to the actual product.



The FlexPDU G2 series PDUs have the following optional functions:

- Power switch
- Fuse
- Current, voltage electric energy
- Sensors: temperature sensor, humidity sensor, door sensor, smoke sensor, water sensor, infrared sensor. (door sensor, smoke sensor, water sensor, infrared sensor not available in EMEA)

2 Default network user and password

The following table lists the default network parameters and services for the PDU.

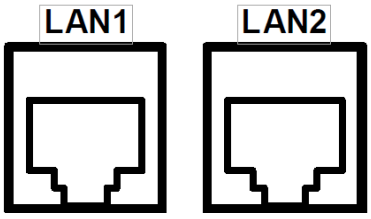
Network parameter		**Network service**	
IP address	DHCP or 192.168.0.254, Display access	HTTP	Disabled
Subnet mask	DHCP or 255.255.255.0	HTTPS	Enabled
Gateway IP address	DHCP or 192.168.0.1	TELNET	Disabled
Preferred DNS		SSH	Enabled
Alternate DNS		SNMP v1/v2c	Disabled
IPV6 address	Display/web access	SNMP v3	Enabled
		Email	Disabled

The following table lists the default user names and passwords for network services of the PDU.

Service		**Username**	**Password**
Web page		admin	admin
Telnet		admin	admin
SSH	Connection password	sshd	123456
	User password	admin	admin
SNMP		Read Community	public
		Writing Community	private
		readWriteUser	authPassword
		readOnlyUser	privacyPassword
LCD		/	111111

3 Use PDU management page

3.1 Connect to network



The LAN ports of the PDU are network management ports, through which HTTP (WEB), TELNET, SSH, SNMP and other protocols can be used for access.

PDUs with two LAN ports are equipped with built-in network switches. One of the LAN ports can be connected to the LAN port of the next PDU.

The operation of connecting the PDU to the network is as follows:

Step 1 Use a network cable to connect the LAN port of PDU to your computer, or use a router for connection.

NOTE

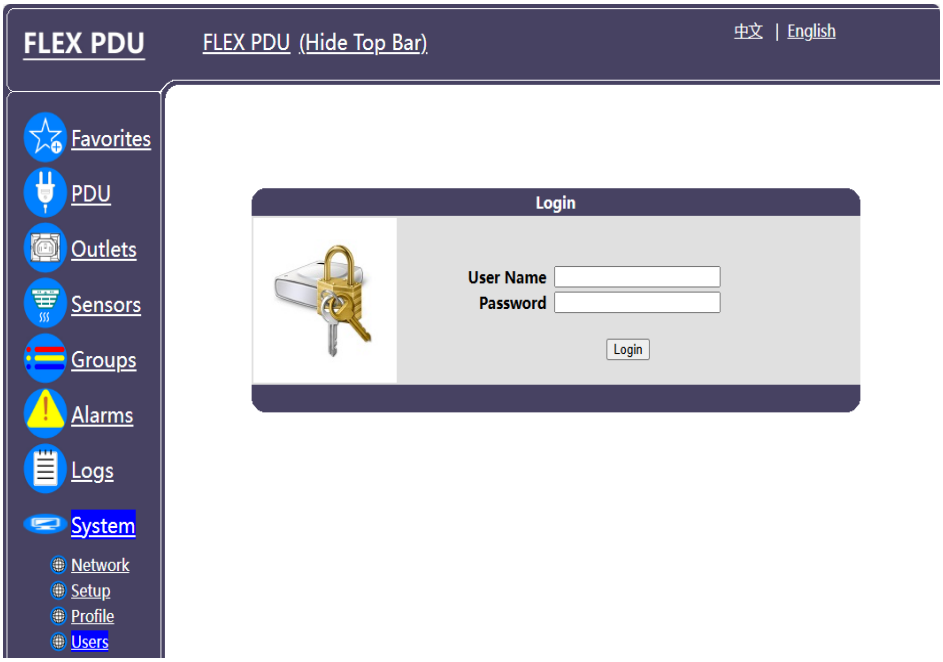
Set network parameters of your computer to access the PDU. If the PDU and your computer are located in the same LAN, set the IP address of your computer in the same network segment with the IP address of the PDU; otherwise, use a correct router or network bridge to connect the PDU.

Step 2 If multiple PDUs are used, use a network cable to connect the other LAN port of the first PDU to the LAN port of the next PDU, and repeat this step for other PDUs.

Step 3 Perform IPv6 network settings on your computer.

Step 4 Power on the PDU. Obtain the PDU's IPv6 address from **/Network/IP addr** on the PDU's LCD panel.

Step 5 Open a browser on your computer. Enter **[PDU's IPv6 address]** in the address bar to access the management page of the PDU, as shown in the following figure.


FLEX PDU
FLEX PDU (Hide Top Bar)
中文 | English
Favorites
PDU
Outlets
Sensors
Groups
Alarms
Logs
System
Network
Setup
Profile
Users
Login
User Name
Password
Login

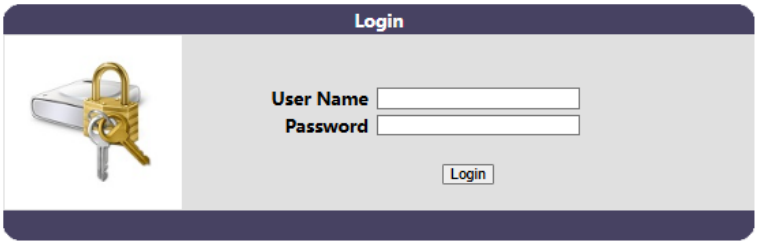
–End

3.2 Login

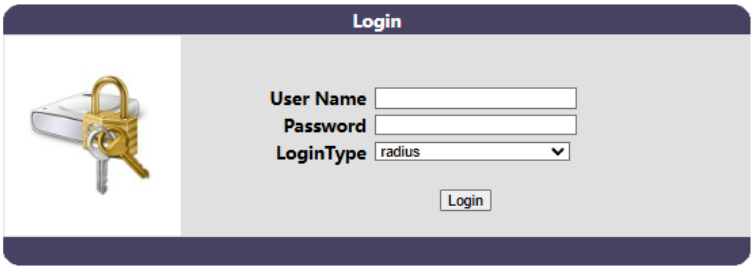
After network connection, enter your username and password to log in to the management page of the PDU. The default administrator username and password are both **admin**.

NOTE

If you log in as an administrator, you can enable the setup mode or browsing mode as required. If you log in as a read-only user, you can enter the browsing mode only.



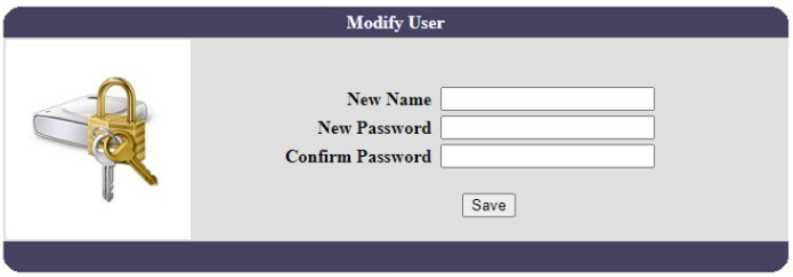
Login interface (Radius protocol disabled)



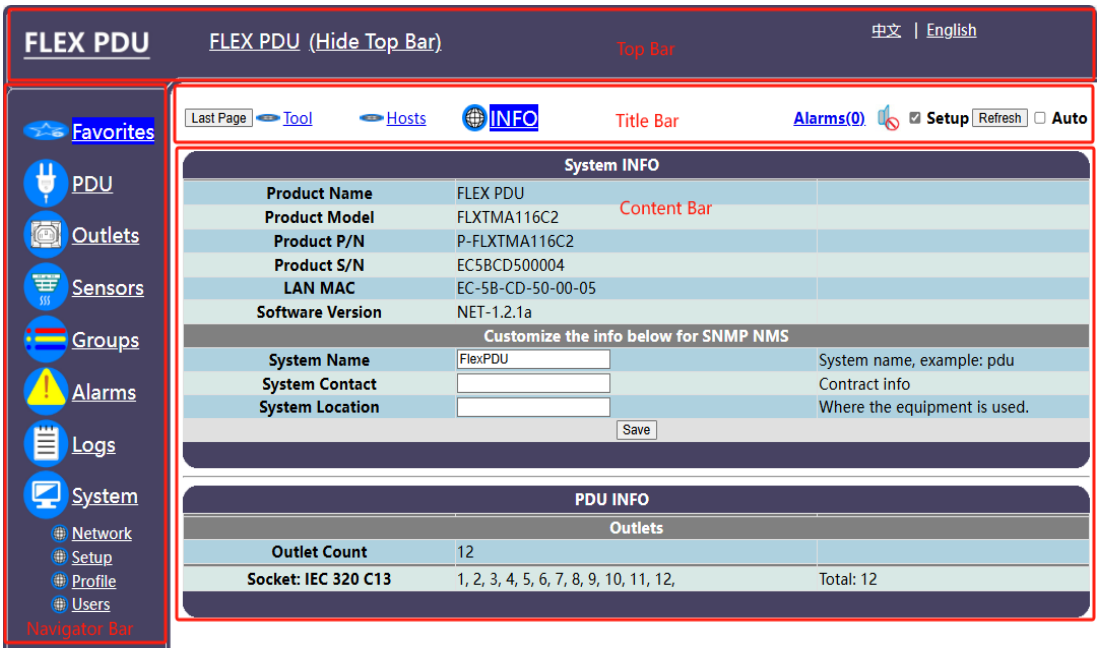
Login interface (Radius protocol enabled)

When the Radius protocol is enabled, you can log in to the PDU management page using the **radius** or **local** login type.

- **radius**: Log in to the PDU using the username and password set on the Radius server.
- **local**: Log in to the PDU using the username and password of the PDU.
- If you enter incorrect passwords for 5 times continuously, the account will be locked for 24 hours. In this case, wait 24 hours or manually restart the PDU to retry login.
- If you forget your username and password, you can restore the network settings through the LCD panel to restore the default username and password.
- The username and password must be changed upon the first login. The password must contain 6 to 20 characters, including uppercase and lowercase letters, digits, and special characters.



3.3 Management page introduction



The **INFO** page is used as an example to introduce the PDU management page.

Item	Description
Top bar	Displays company information and logo. You can click **Hide Top Bar** to hide the top bar.
Left navigation bar	Navigation bar, including **Favorites**, **PDU**, **Outlets**, **Sensors**, **Groups**, **Alarms**, **Logs**, and **System**.

Item	Description
Right content bar	Displays the status and settings. The top title bar displays submenus and buttons such as the setup and automatic refresh checkboxes: – **Last Page**: Return to the last visited web page. – **Alarm**: Displays the alarm status and quantity.  indicates that the alarm sound is turned on, and  indicates that the alarm sound is turned off (Note: After the PDU is restarted, the sound will be turned on again). – **Setup**: Select it to enable the setup mode, or unselect it to enable the browsing mode. In the setup mode, parameter settings are available. In the browsing mode, parameters are read-only and cannot be modified. **NOTE** To modify parameter values, select **Setup** using an administrator account. Read-only users cannot select **Setup**. – **Refresh**: Click to refresh the current page. – **Auto**: Select to enable automatic refresh of the current page to view status changes immediately. You can change the automatic refresh interval in **System** > **Setup**.

3.4 Page screensaver and refresh

- Page screensaver: The screensaver function is provided to ensure safety. If there is no operation for a certain period of time, the page will log out. You can set the screensaver time interval in **System** > **Setup** page. For detailed operations, see **System settings**.
- Page refresh: After the page is submitted, it will refresh after 4 seconds. For some operations that take a long time (such as submission), the final operation results can be displayed correctly after delayed refresh.

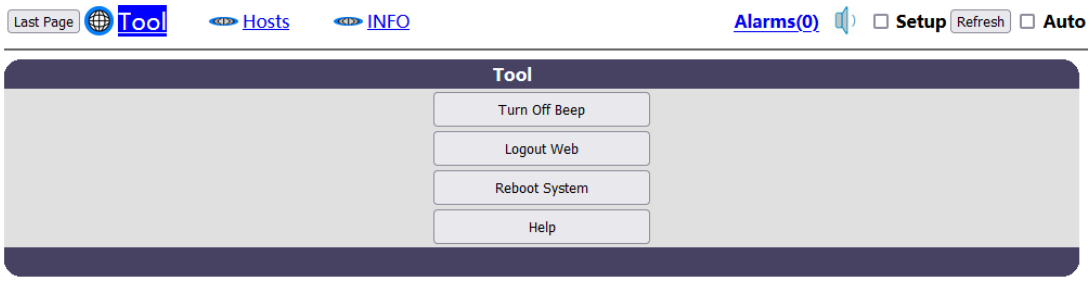
3.5 Shortcut page – Favorites

For quick setup and information viewing, the following shortcut menus are provided:

- Tool: Used to turn on/off buzzer, log out, restart, and view help information.
- Hosts: Used to link other PDUs.
- INFO: Used to view system and PDU information and set information for SNMP.

3.5.1 Tool page

Log in to the PDU management page, click **Favorites** in the left menu bar, and then click **Tool** in the top title bar to access the Tool page.



On this page, you can perform the following operations.

Operation	Description
Turn on/off buzzer	Click **Turn On Beep** or **Turn Off Beep**. The buzzer is enabled by default. If you restart the PDU after turning off the buzzer, the buzzer will be enabled again.
Log out	Click **Logout Web**, and then click **OK** in the displayed dialog box.
Restart the system	Click **Reboot System**, and then click **OK** in the displayed dialog box.
View help information	Click **Help** to see how to enable the setup mode.

3.5.2 Hosts page

Log in to the PDU management page, click **Favorites** in the left menu bar, and then click **Hosts** in the top title bar to access the Hosts page. On this page, you can manage associated PDU links. After adding associated PDU links on this page, you can directly access the management pages of associated PDUs in the browsing mode, without the need to open a new browser window.

3.5.2.1 Add an associated PDU link

Step 1 Log in to the PDU management page.

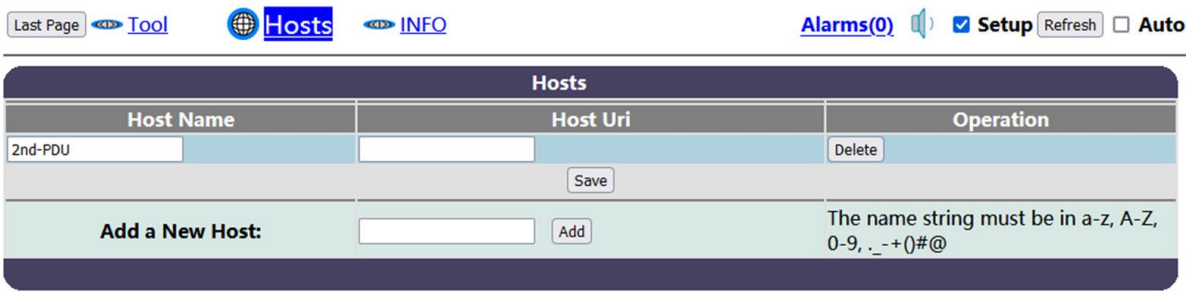
Step 2 Click **Favorites** in the left menu bar, and then click **Hosts** in the top title bar to access the Hosts page.

Step 3 Enter the PDU name after **Add a New Host**, and click **Add**.

2nd-PDU is added as an example.

NOTE

Only **a-z**, **A-Z**, **0-9**, **._-+()#@** are allowed for the host name.

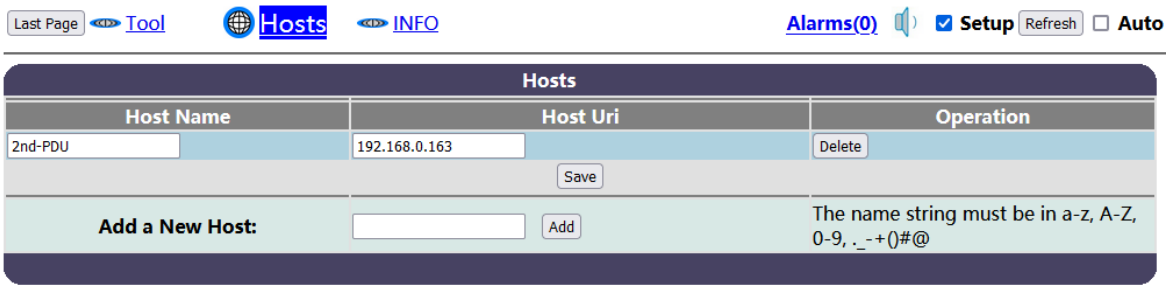


Step 4 Enter the PDU link under **Host Uri**, and click **Save**.

NOTE

The associated PDUs and the current PDU must be located in the same LAN. A maximum of 32 associated PDUs can be added.

192.168.0.163 is used as an example.



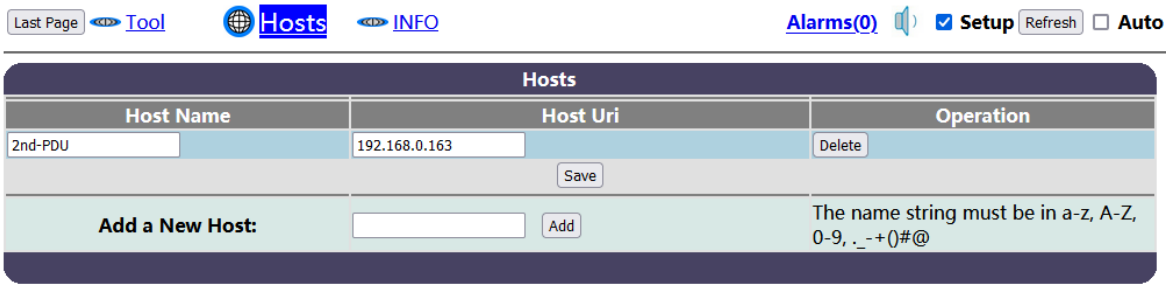
–End

3.5.2.2 Modify an associated PDU link

Step 1 Log in to the PDU management page.

Step 2 Click **Favorites** in the left menu bar, and then click **Hosts** in the top title bar to access the Hosts page.

Step 3 Modify the name and link of an existing associated PDU as required, and click **Save**.



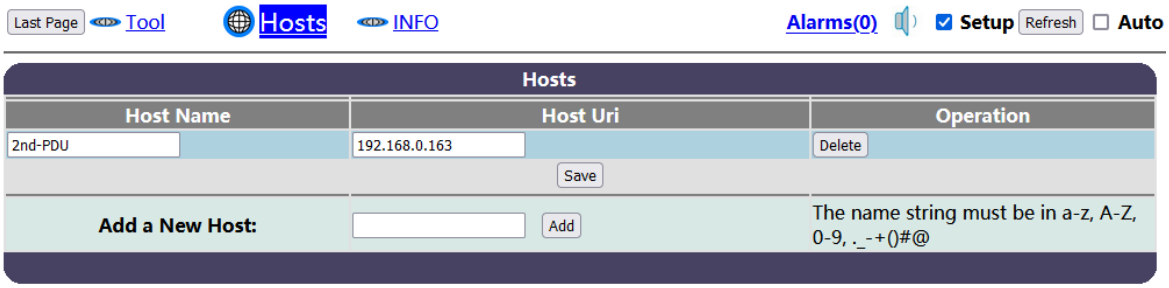
–End

3.5.2.3 Delete an associated PDU link

Step 1 Log in to the PDU management page.

Step 2 Click **Favorites** in the left menu bar, and then click **Hosts** in the top title bar to access the Hosts page.

Step 3 Click **Delete** in the line of the associated PDU.



–End

3.5.2.4 Access an associated PDU link

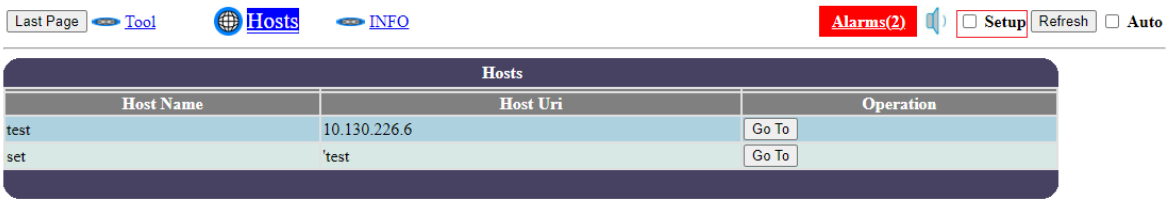
NOTE

The associated PDU link can be accessed only after the browsing mode is enabled.

To add an associated PDU link, see Add an associated PDU link.

Step 1 Log in to the PDU management page.

Step 2 Deselect **Setup** at the upper right corner of the page to enable the browsing mode.



Step 3 Click **Favorites** in the left menu bar, and then click **Hosts** in the top title bar to access the Hosts page.

Step 4 Click **Go To** in the line of the associated PDU.

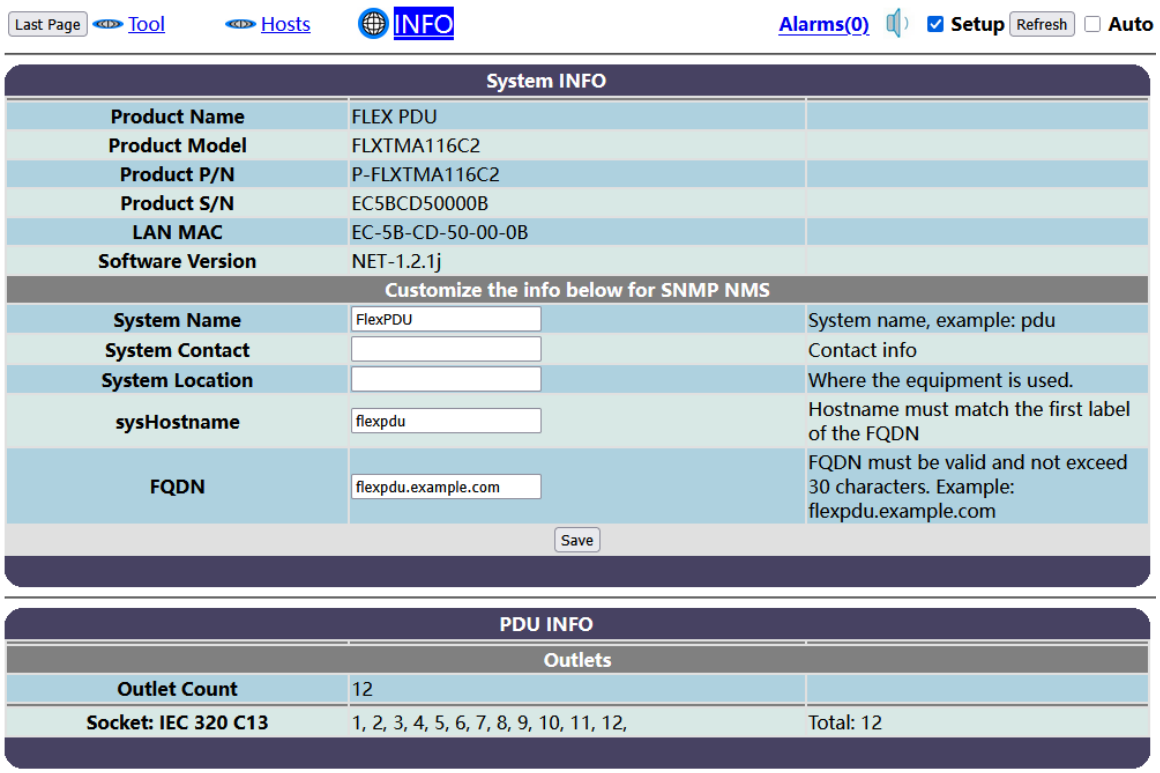
–End

3.5.3 INFO page

Log in to the PDU management page, click **Favorites** in the left menu bar, and then click **INFO** in the top title bar to access the INFO page. On this page, you can view system and PDU information, and set information for SNMP (including system name, contact, and location).

NOTE

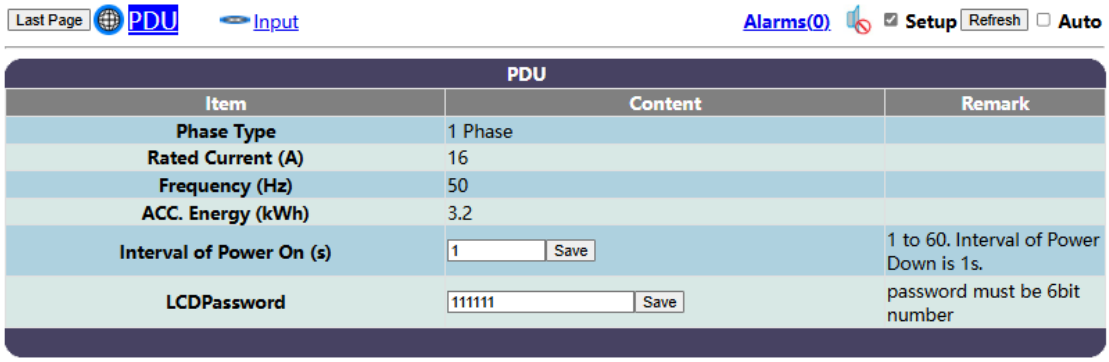
The information for SNMP can be set only in the setup mode.



3.6 Power page – PDU

3.6.1 View/Set the PDU input

Log in to the PDU management page, click **PDU** in the left menu bar, and then click **PDU** in the top title bar to access the PDU page. On this page, you can view the overall status information of the PDU (including the input phase type, rated current, frequency, accumulated energy) and set the power-on interval and LCD password setting.



The following table describes the parameters on the page.

Parameter	Description
Interval of Power On (s)	Used to set the power-on and power-off interval of outlet. The default value is 1 second, and the value range is 1s to 60s.
LCD Password	Used to set the LCD password, which must contain six digits. The default LCD password is **111111**.

3.6.2 View/Set the input phase

Log in to the PDU management page, click **PDU** in the left menu bar, and then click **Input** in the top title bar to access the Input page. On this page, you can view the status information of the input phase and set the current and voltage alarm thresholds.

The input range for current alarm thresholds is 0 to 16A. For voltage alarm thresholds, the input range is 50 to 500V and the default values are 190V/280V.

Last Page PDU Input INFO Alarms(0) Setup Refresh Auto

Input		
Item	**Content**	**Remark**
Voltage (V)	230.3	
Current (A)	0	
Apparent Power (W)	0	
Active Power (W)	0	
Reactive Power (W)	0	
Factor	0	
Energy (kWh)	40.1	
Rated Power (W)	3520	
Remaining Power (W)	3520	
Low Limit/High Limit (A)	0 16	
Low Limit/High Limit (V)	190 280	Voltage alarm threshold.

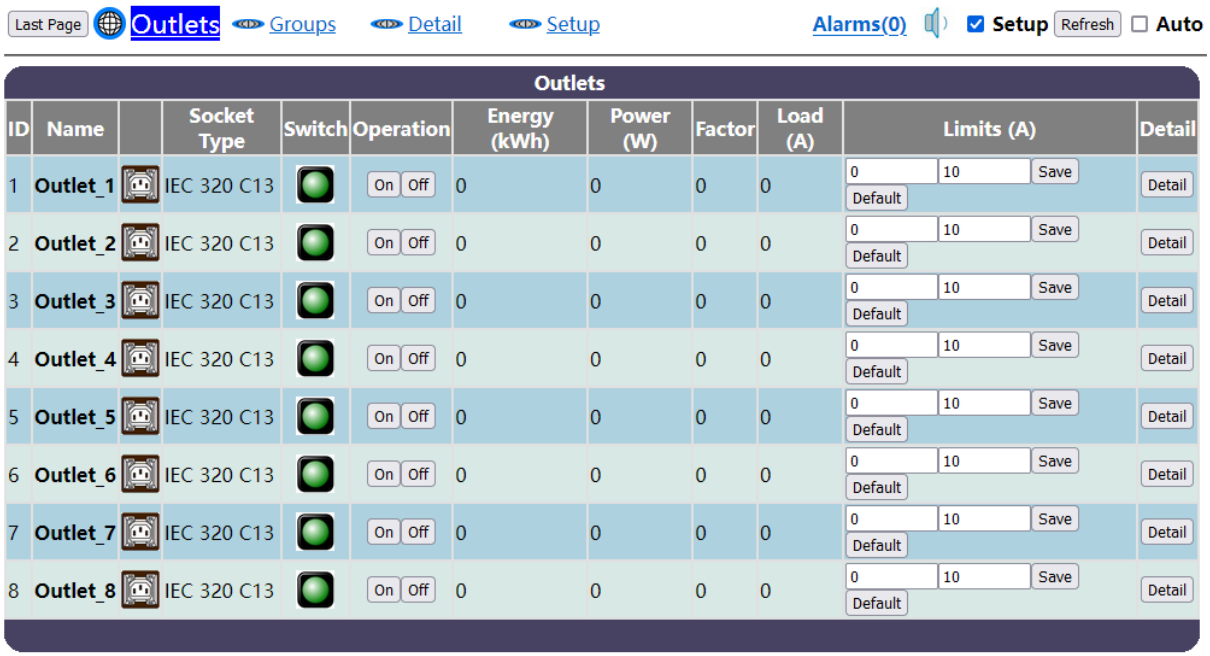
History Event Log of Current:

Time	Type	Source	Detail
No logs!			

3.7 Socket page – Outlets

3.7.1 View and set outlets

Log in to the PDU management page, click **Outlets** in the left menu bar, and then click **Outlets** in the top title bar to access the Outlet page. On this page, you can view the information of all outlets and set the current alarm thresholds for outlets.

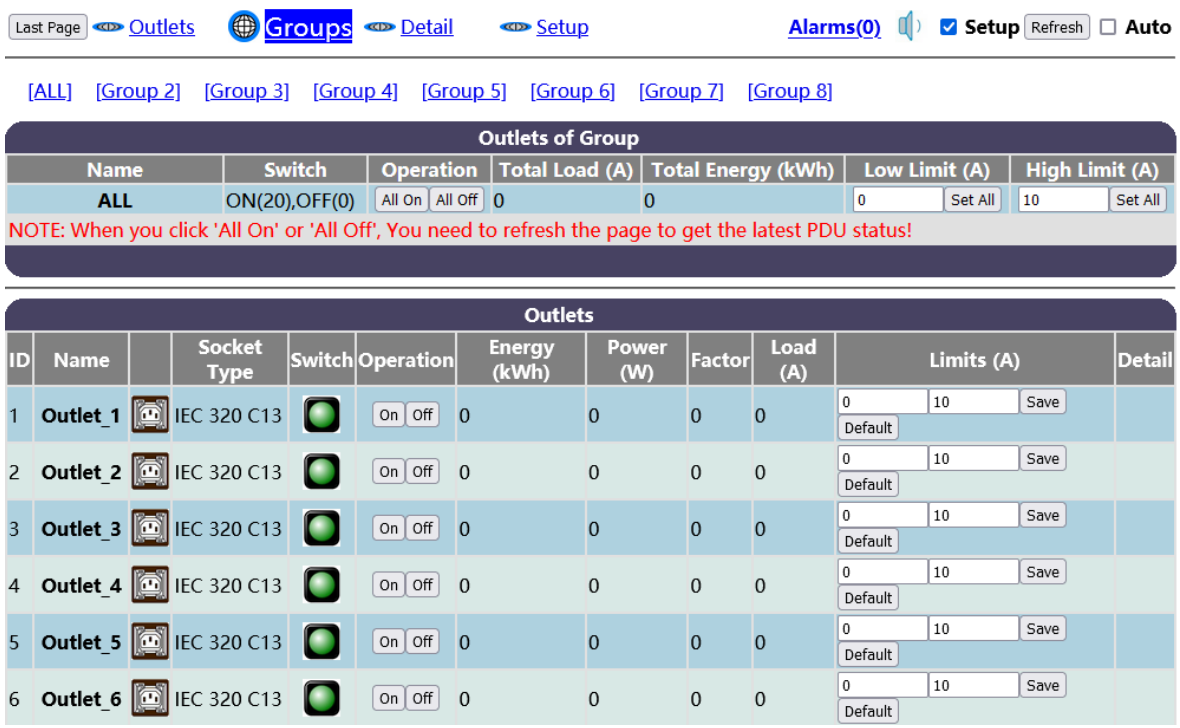


Parameter	Description
ID	Indicates the label on the outlet panel, which uniquely identifies the code of the outlet in the whole PDU.
Name	Indicates the outlet name set by the user for convenient management.
Socket Type	Indicates the outlet type.
Switch	Indicates the ON/OFF status of the outlet.
Operation	Used to turn on/off outlets. Available only for PDUs that support this function.
Energy (kWh)	Indicates the outlet energy. Available only for PDUs that support this function.
Power	Indicates the active power of outlet. Available only for PDUs that support this function.
Factor	Indicates the outlet power factor. Available only for PDUs that support this function.
Load (A)	Indicates the outlet load current. Available only for PDUs that support this function.

Parameter	Description
Limits (A)	Indicates the outlet load current alarm threshold, ranging from 0 to the rated current of the outlet. Available only for PDUs that support this function.
Detail	Click **Detail** to view details and history events of an outlet. For details, see View outlet details.

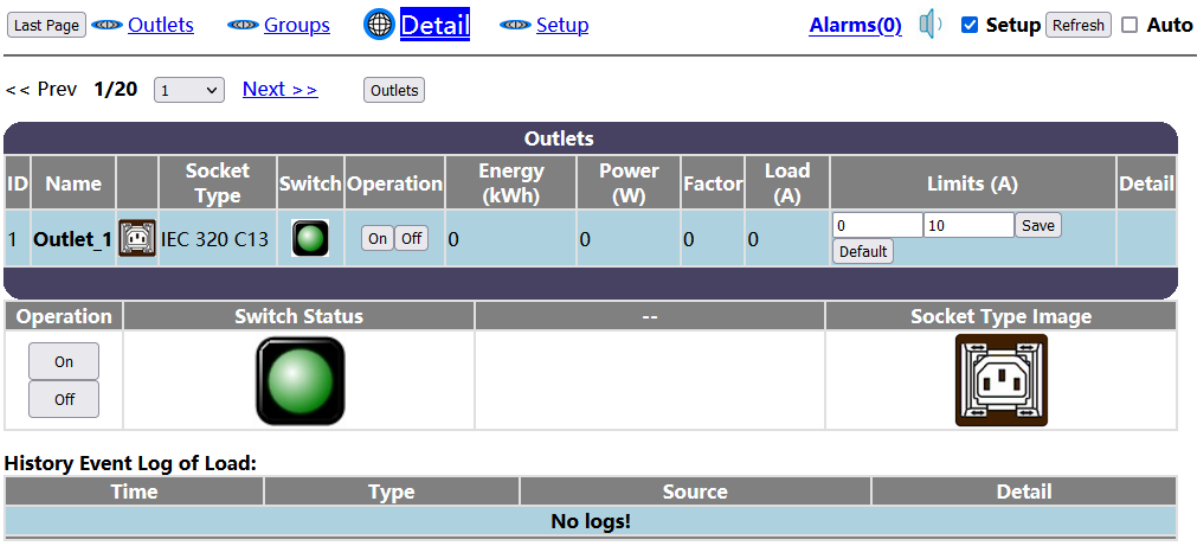
3.7.2 Outlet groups

Log in to the PDU management page, click **Outlets** in the left menu bar, and then click **Groups** in the top title bar to access the Groups page. On this page, you can manage outlets in groups, turn on/off outlets and set current range in a batch, and view current and energy statistics. For details, see Grouping page - Groups.



3.7.3 View outlet details

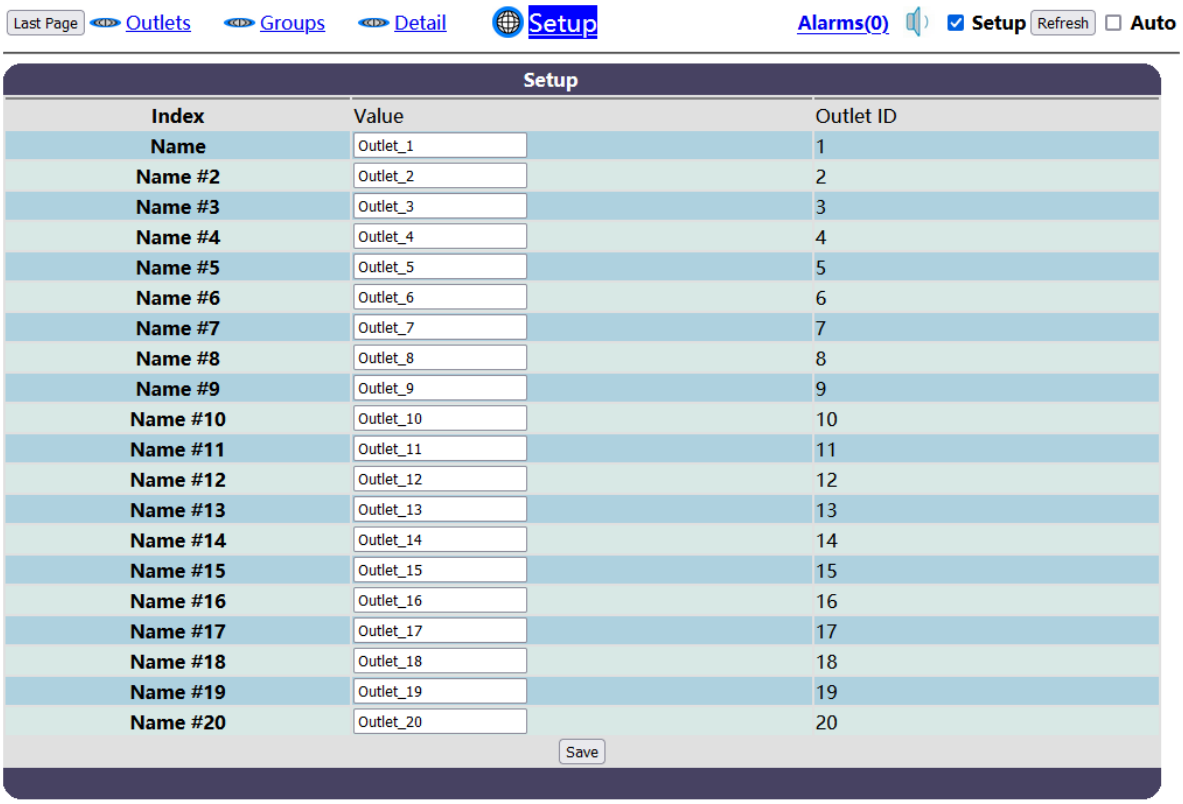
Log in to the PDU management page, click **Outlets** in the left menu bar, and then click **Detail** in the top title bar to access the Detail page. On this page, you can view details and history alarms (including current and fuse alarm history) of an outlet.



You can click **Prev** or **Next** to switch between outlet pages, or directly select the outlet ID from the ID drop-down list box to go to the detail page of the specified outlet. To return to the Outlets page, click **Outlets**. For details about the outlet parameters, see View and set outlets.

3.7.4 Set outlet names and communication addresses

Log in to the PDU management page, click **Outlets** in the left menu bar, and then click **Setup** in the top title bar to access the Setup page. On this page, you can set outlet names.



3.8 Sensor page – Sensors

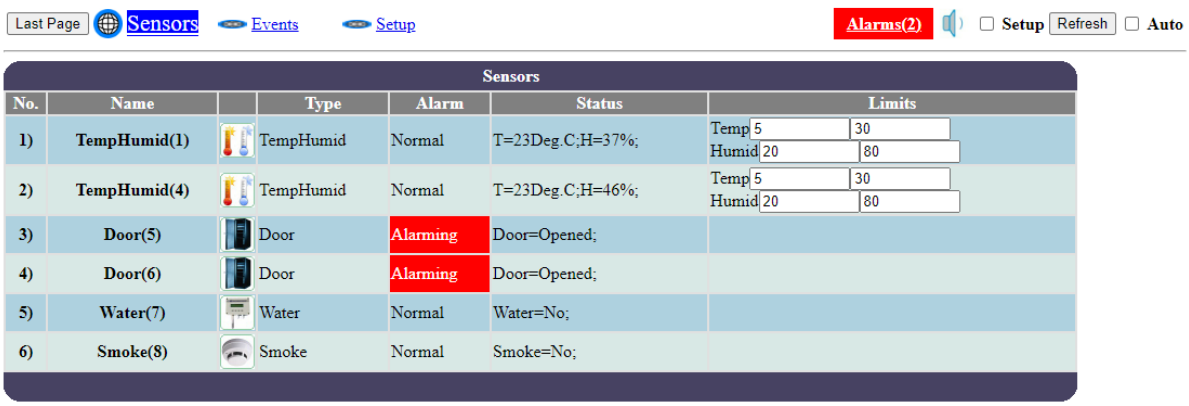
3.8.1 View sensor info and set sensor alarm thresholds

Log in to the PDU management page, click **Sensors** in the left menu bar, and then click **Sensors** in the top title bar to access the Sensors page. On this page, you can view information of all sensors and set temperature and humidity alarm thresholds.

When a sensor alarm occurs, the alarm cell will be displayed in red, as shown in the following figure.

NOTE

EMEA region: only temperature and humidity sensor available.



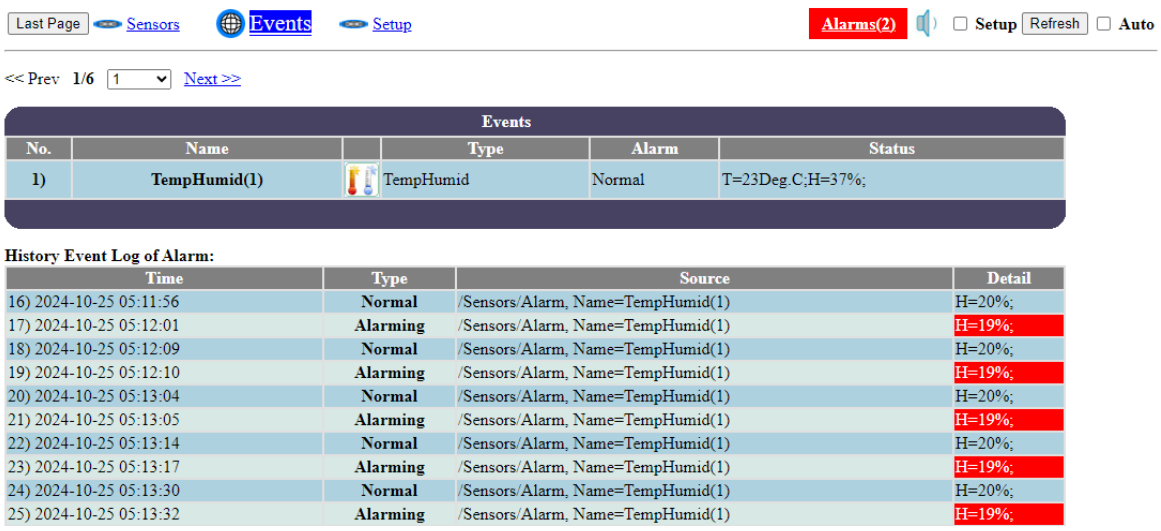
The following table describes some parameters on this page.

Parameter		Description
Status		Displays the current temperature and humidity.
Limits	Temp	Specifies the temperature alarm threshold. The input range is -40℃ to +100℃, and the default values are -40℃/+100℃.
	Humid	Specifies the temperature alarm threshold. The input range is 0 to 100%, and the default values are 0/100%.

3.8.2 View sensor events

Log in to the PDU management page, click **Sensors** in the left menu bar, and then click **Events** in the top title bar to access the Events page. On this page, you can view information, alarms, and connection status history of a specific sensor.

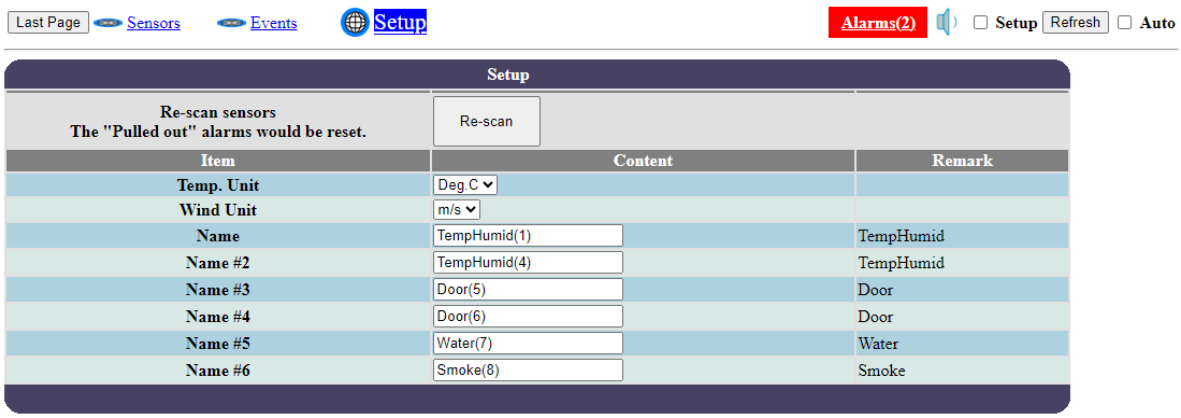
When a sensor alarm occurs, the alarm cell will be displayed in red, as shown in the following figure.



You can click **Prev** or **Next** to switch between sensor pages, or directly select the sensor ID from the ID drop-down list box.

3.8.3 Set sensor parameters

Log in to the PDU management page, click **Sensors** in the left menu bar, and then click **Setup** in the top title bar to access the Setup page. On this page, you can set sensor parameters.



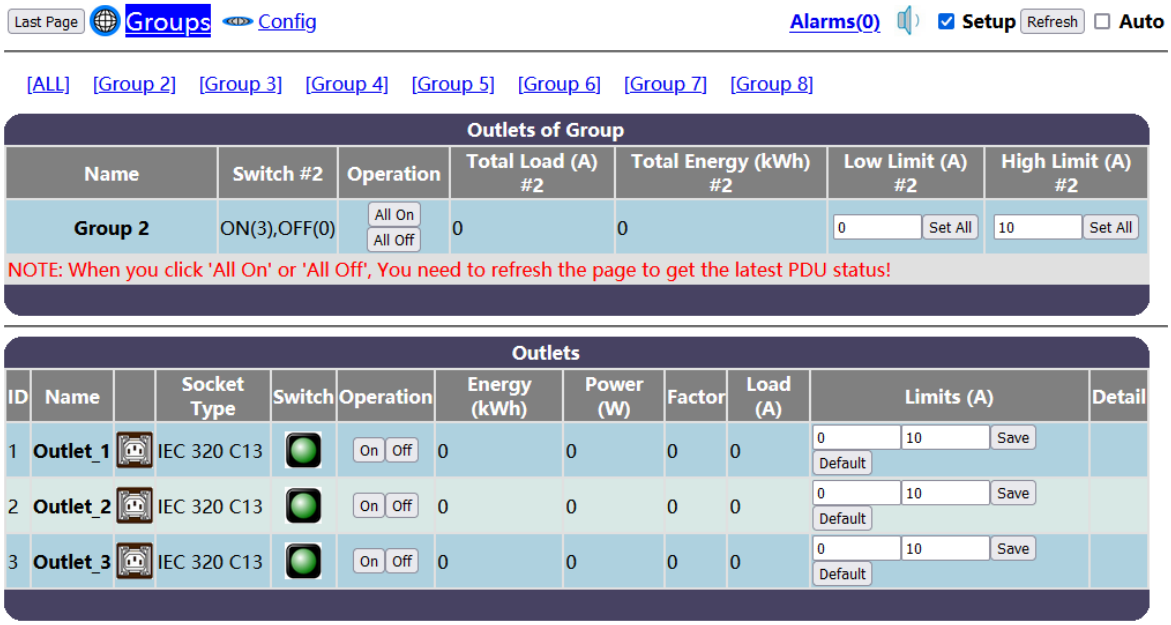
The following table describes the sensor parameters.

Parameter	Description
Re-scan	Used to rescan sensors. Sensors are externally mounted on the sensor port of the PDU, so an alarm will be generated when the sensor is considered to be pulled out. At this time, you can execute this command to rescan all sensors to eliminate the alarm of sensor pull-out.
Temp. Unit	Used to set the temperature unit, including **Deg.C** and **Deg.F**.
Wind Unit	Used to send the wind sped unit, including **m/s** and **ft/s**.
Name	Used to set sensor names.

3.9 Grouping page – Groups

3.9.1 Group management

Log in to the PDU management page, click **Groups** in the left menu bar, and then click **Groups** in the top title bar to access the Groups page. On this page, you can manage outlets in groups, turn on/off outlets and set current range in batches, and view current and energy statistics.



Item	Description
Group filter	– ALL: Click to see all outlets. The name cannot be modified. – Group 2 to Group 8: A maximum of seven groups are supported. The group names are default to **Group 2** to **Group 8** and can be customized.
Outlets of Group	Displays statistics information, and used to perform operations for all outlets in the group. – **All On/All Off**: Used to turn on/off all outlets in the group. – **Switch**: Displays the number of outlets turned on/off. As shown in the preceding figure, 3 outlets are turned on and 0 outlets are turned off. – **Operation**: Used to turn on/off all outlets in the group. – **Total Load**: Indicates the total current of all outlets in the group. – **Total Energy**: Indicates the total energy of all outlets in the group. – **Low Limit/High Limit**: Used to set the current range for all outlets in the group, ranging from 0 to the lowest rated current of all outlets in the group.
Outlets	For details, see View and set outlets.

3.9.2 Group configuration

Log in to the PDU management page, click **Groups** in the left menu bar, and then click **Config** in the top title bar to access the Config page. On this page, you can configure outlet groups, including:

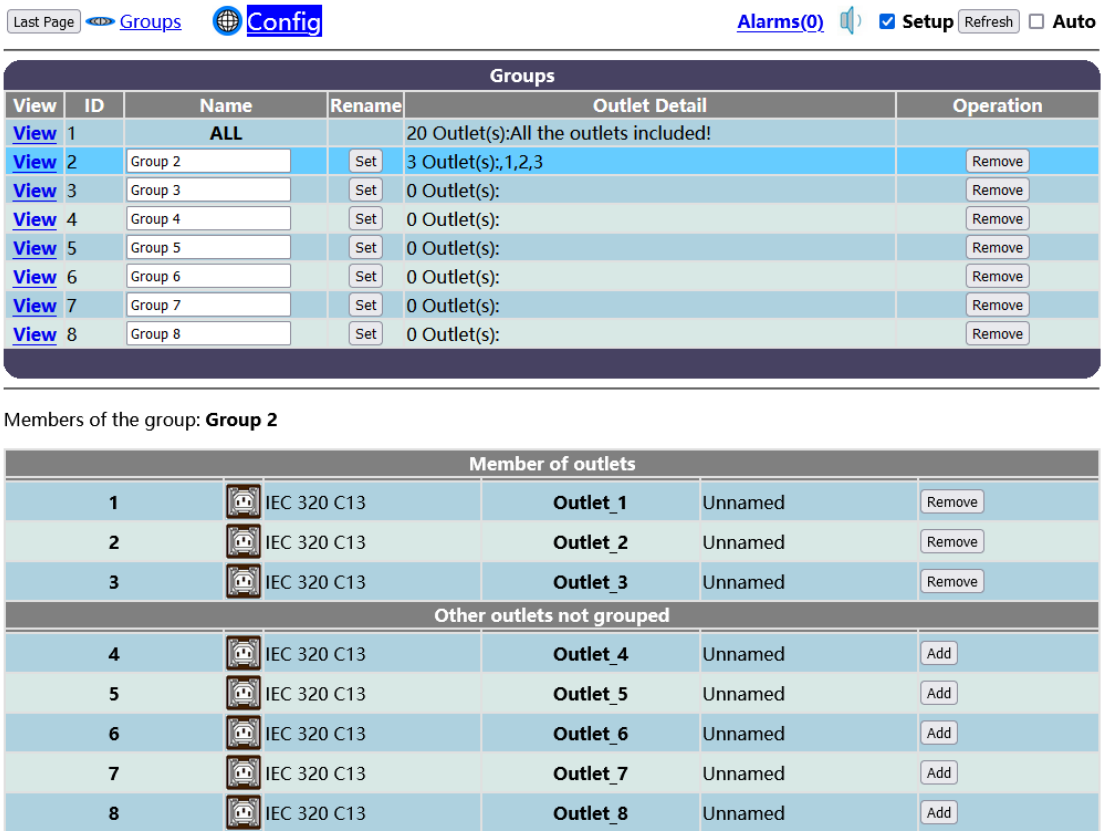
- View outlet groups
- Set outlet group names
- Add outlets in groups
- Remove outlets from groups

NOTE

An outlet can be added in only one group (excluding **ALL**). To add an outlet to another group, remove it from its original group first.

3.9.2.1 View outlet groups

Log in to the PDU management page, click **Groups** in the left menu bar, and then click **Config** in the top title bar to access the Config page. Click **View** before a group to see the group information in the table below.

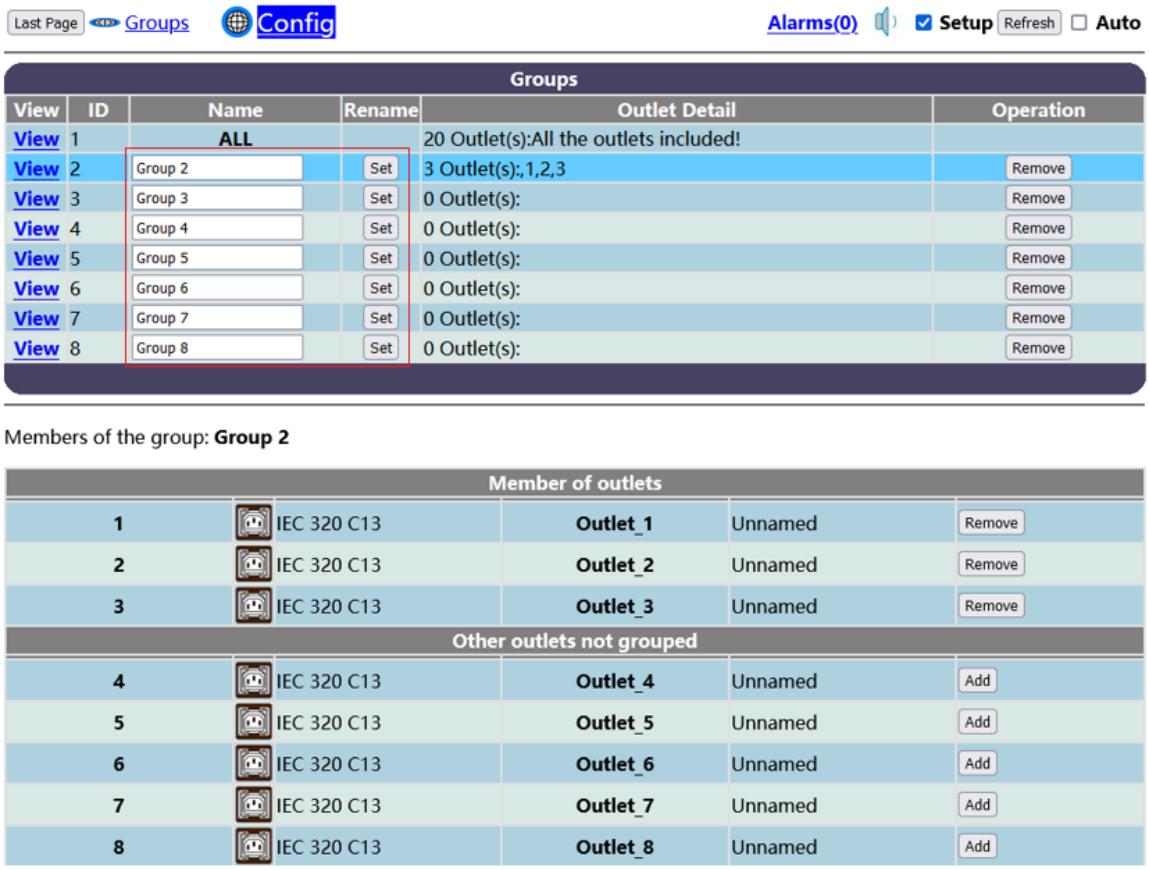


3.9.2.2 Set outlet group names

Step 1 Log in to the PDU management page.

Step 2 Click **Groups** in the left menu bar, and then click **Config** in the top title bar to access the Config page.

Step 3 Enter a group name in the **Name** box, and click **Set**.



–End

3.9.2.3 Add an outlet in a group

NOTE

An outlet can be added in only one group (excluding **ALL**). To add an outlet to another group, remove it from its original group first.

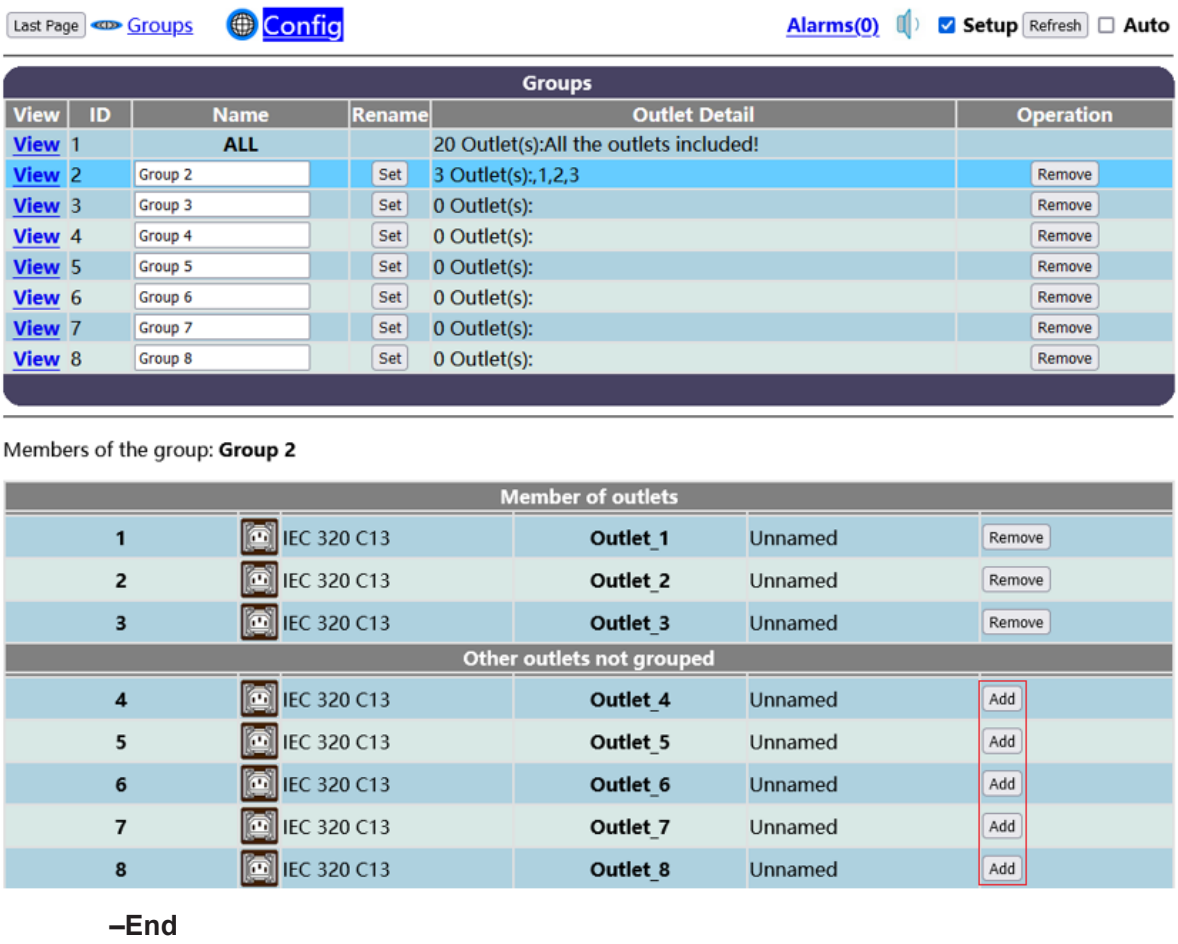
Step 1 Log in to the PDU management page.

Step 2 Click **Groups** in the left menu bar, and then click **Config** in the top title bar to access the Config page.

Step 3 Click **View** before a group.

Group 2 is used as an example here.

Step 4 Click **Add** in the **Other outlets not grouped** module.



–End

3.9.2.4 Remove an outlet from a group

Step 1 Log in to the PDU management page.

Step 2 Click **Groups** in the left menu bar, and then click **Config** in the top title bar to access the Config page.

Step 3 Click **View** before a group.

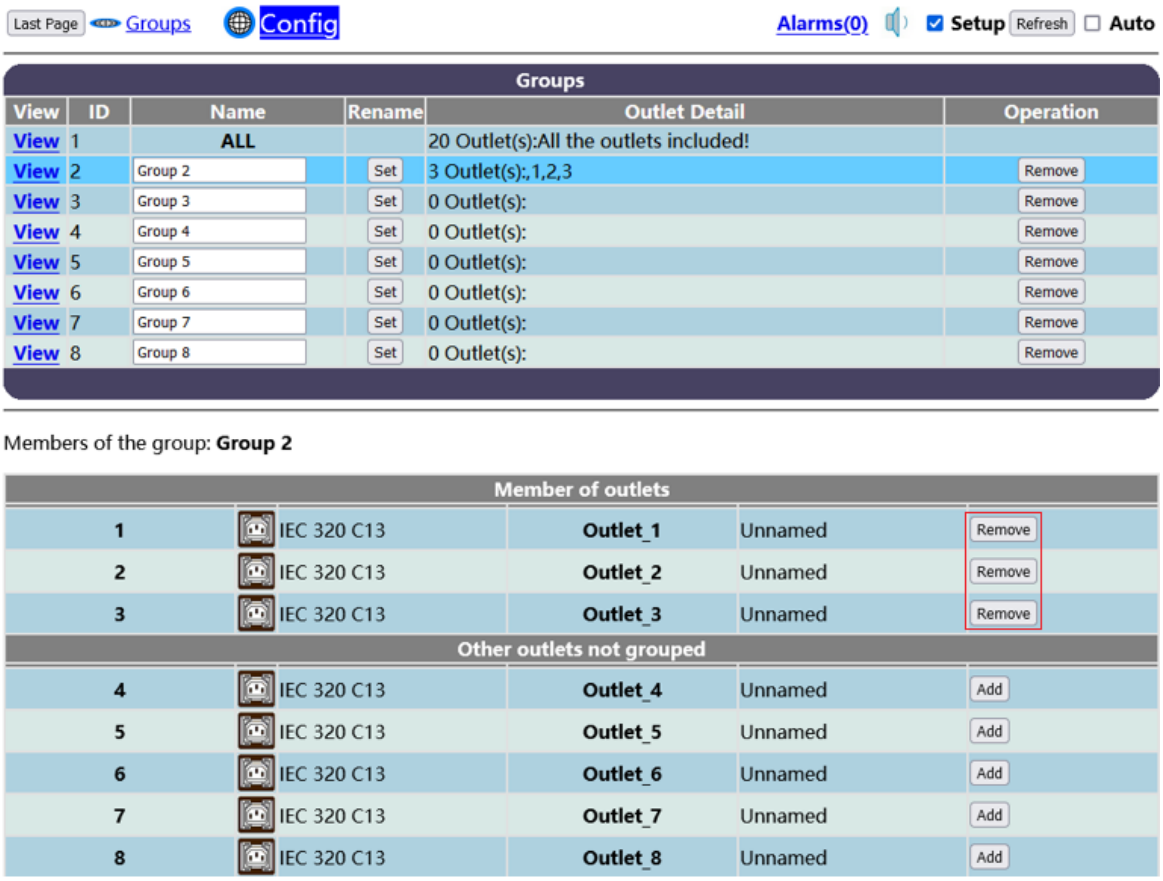
Group 2 is used as an example here.

Step 4 Click **Remove** in the **Member of outlets** module.

NOTE

To remove all outlets in a group, click **Remove** in the **Groups** module.

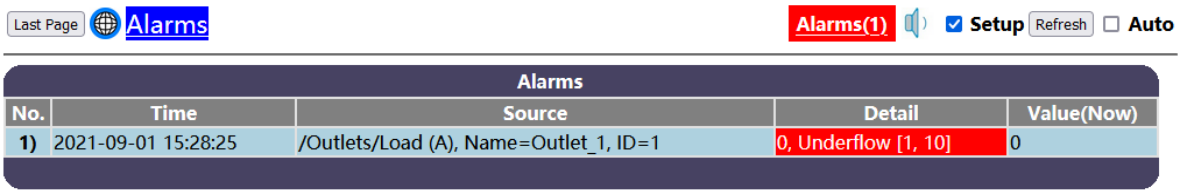
Use PDU management page



–End

3.10 Current alarm page – Alarms

Log in to the PDU management page, click **Alarms** in the left menu bar, and then click **Alarms** in the top title bar to access the Alarm page. On this page, you can see information of current alarms, including alarm occurrence time, source, details, and status. The alarms displayed here cannot be cleared.

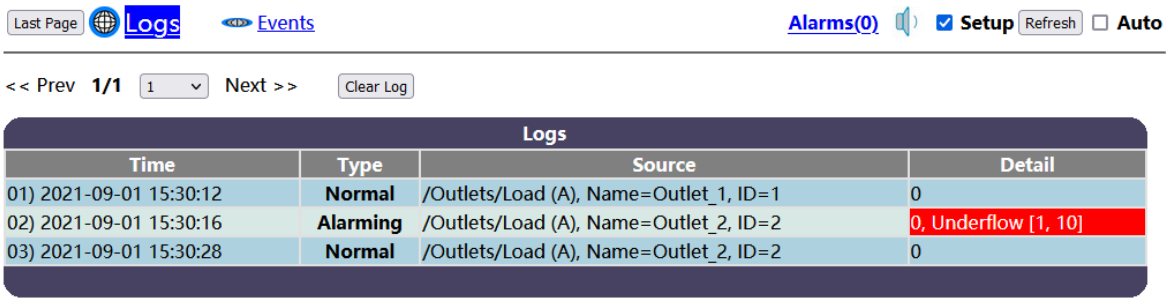


3.11 Log page– Logs

3.11.1 View/Clear history alarm logs

Log in to the PDU management page, click **Logs** in the left menu bar, and then click **Logs** in the top title bar to access the Logs page. On this page, you can view and clear history alarm logs.

To clear all history alarm logs, click **Clear Log**.



3.11.2 Download system operations logs

Log in to the PDU management page, click **Logs** in the left menu bar, and then click **Events** in the top title bar to access the Events page. On this page, you can download all system operation logs.

3.12 System page – System

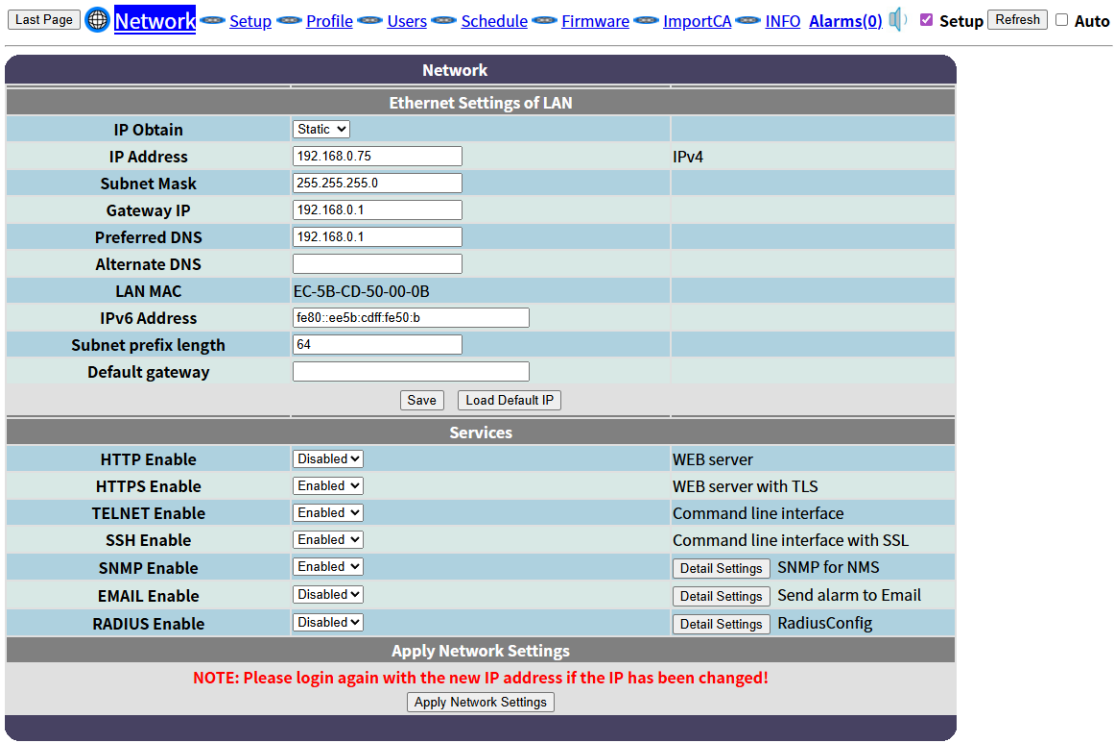
The system supports network settings, system settings, backup and restoration, user management, upgrade, and system information.

3.12.1 Set network parameters

Log in to the PDU management page, click **Network** under **System** in the left menu bar to access the Network page. In the **Ethernet Settings of LAN** module, you can set network parameters as required.

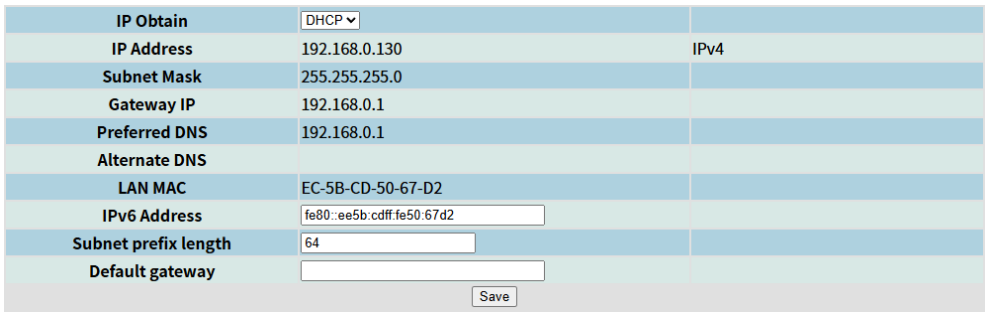
NOTE

After the IP address is modified, you need to use the new IP address to access the PDU management page.



The following table describes the parameters on the page.

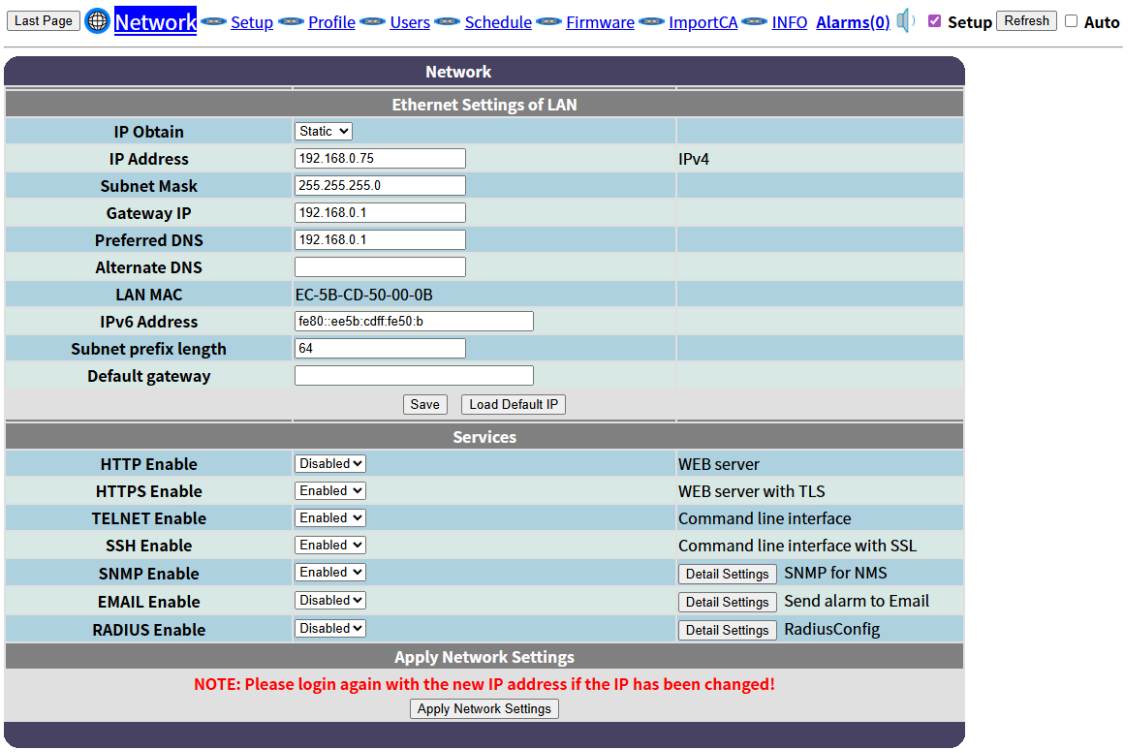
Parameter	Description
IP Obtain	Used to configure the IPv4 address. To restore to default IP address and service, click **Load Default IP**. The DHCP activation interface is shown in the following figure

Parameter	Description
	
IPv6 Address	The IPv6 address is automatically allocated by the system. You can set it based on the IPv6 address rules as required.
Subnet prefix length	Specifies the IPv6 subnet prefix length.
Default gateway	Specifies the IPv6 gateway.

The configuration will take effect upon next restart. To have the parameters take effect immediately, click **Apply Network Settings**.

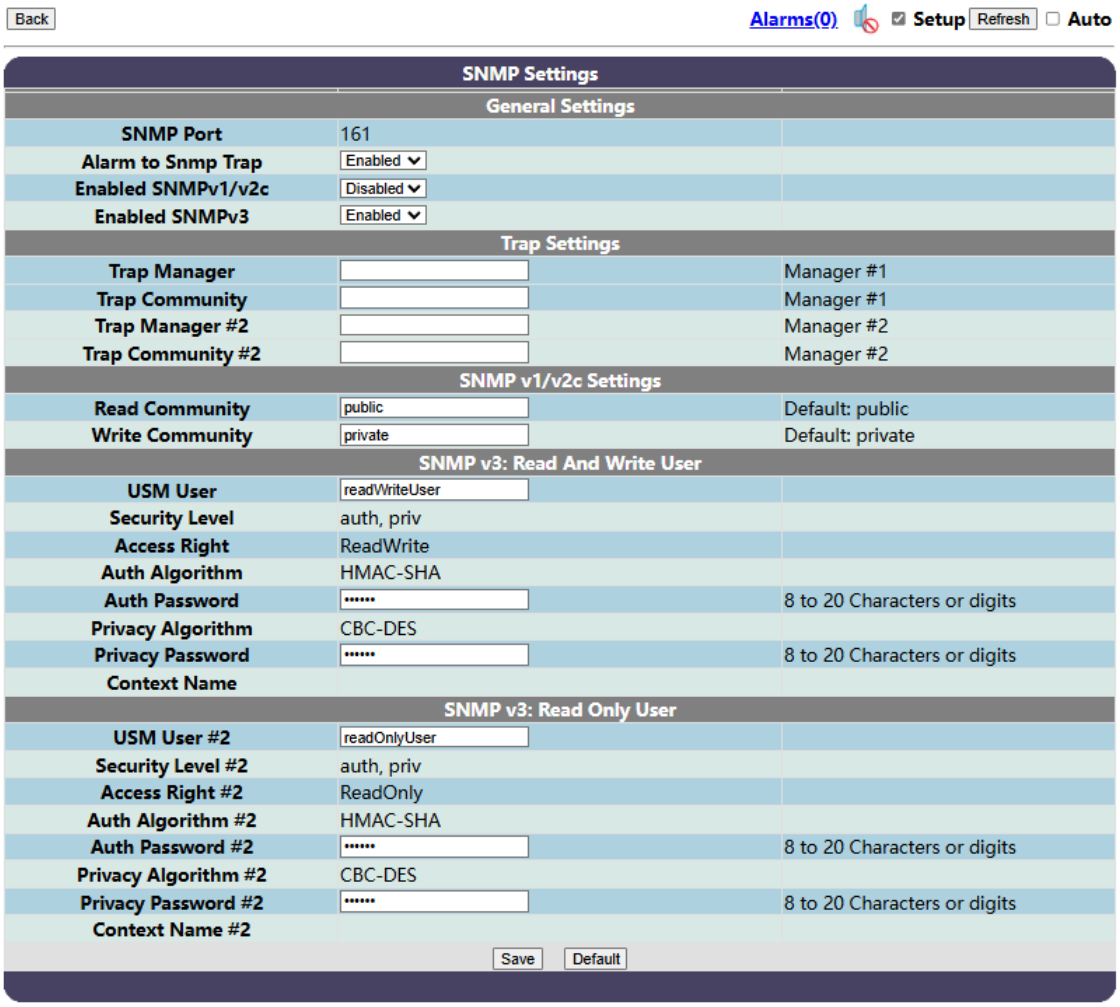
3.12.2 Enable/Disable network services

Log in to the PDU management page, click **Network** under **System** in the left menu bar to access the Network page. In the **Services** module, you can enable/disable network services as required, including HTTP, HTTPS, TELNET, SSH, SNMP, Email, and Radius services.



Set the SNMP service

Enable the SNMP service, and click **Detail Settings** on the right to enter the service configuration page, as shown in the following figure.



By default, the functions of SNMP v1 and v2c are disabled.

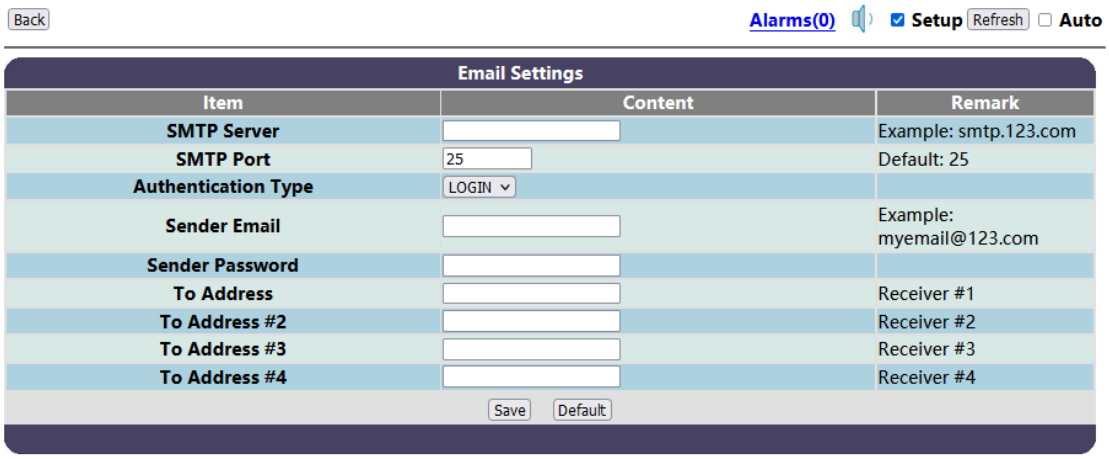
- Default read community: public
- Default write community: private

By default, the functions of SNMP v3 are enabled.

For users **readWriteUser** and **readOnlyUser**, the default authentication password is **authPassword**, and the default encryption password is **privacyPassword**.

Set the Email service

Enable the Email service, and click **Detail Settings** on the right to enter the service configuration page, as shown in the following figure.

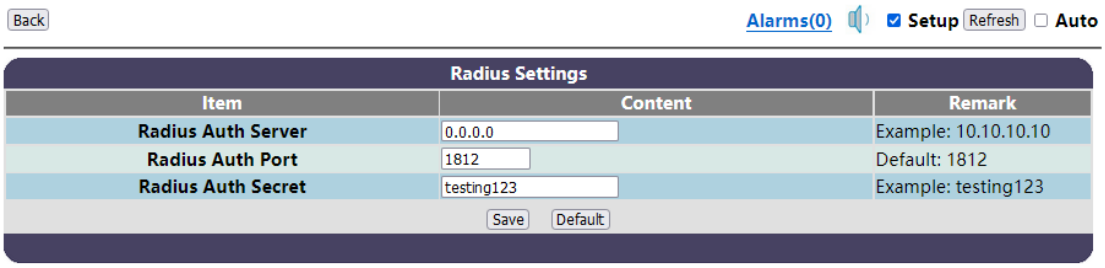


The following table describes the parameters on the page.

Parameter	Description
SMTP Server	Email sever.
SMTP Port	Email port number.
Authentication Type	Email login mode, which cannot be modified.
Sender Email	Email address of sender.
Sender Password	Password of the sender email.
To Address	Email address to receive emails. A maximum of four receiver email addresses can be set.

Set the Radius service

Enable the Radius service, and click **Detail Settings** on the right to enter the service configuration page, as shown in the following figure.



The following table describes the parameters on the page.

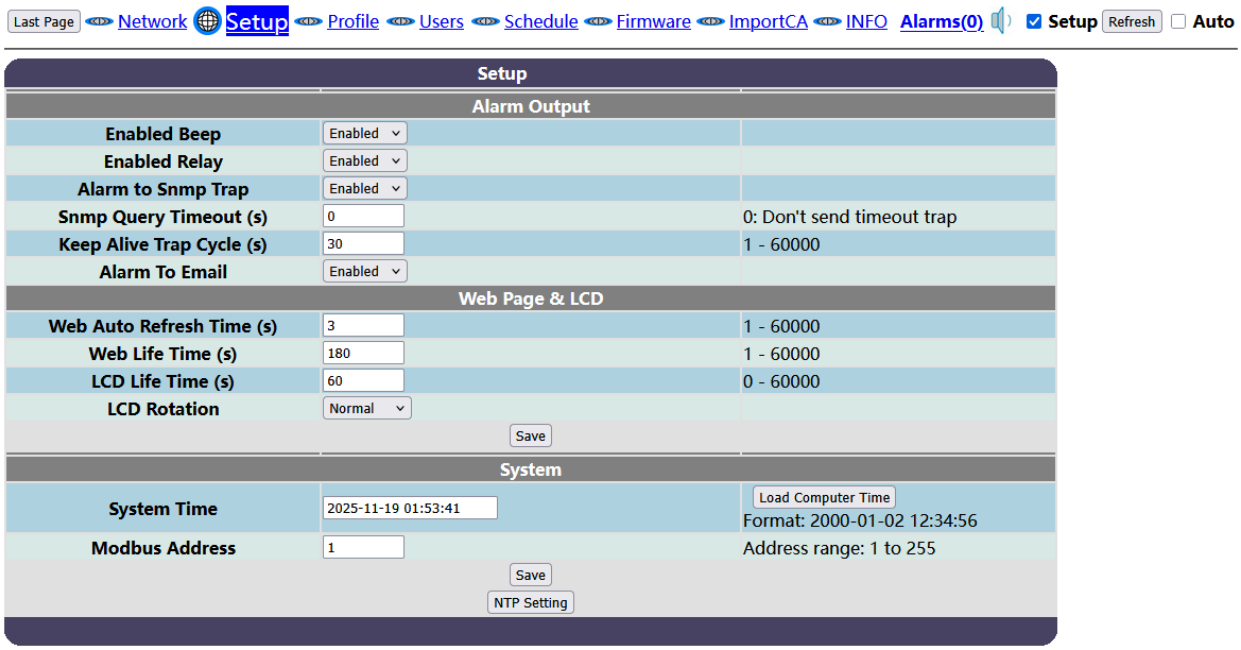
Parameter	Description
Radius Auth Server	Radius authentication server.

Parameter	Description
Radius Auth Port	Radius authentication protocol port.
Radius Auth Secret	Radius authentication server password.

3.12.3 System settings

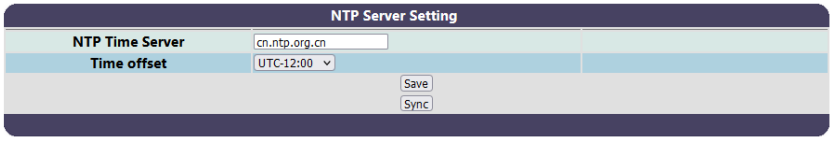
Log in to the PDU management page, click **Setup** under **System** in the left menu bar to access the Setup page. On this page, you can perform the following settings:

- Alarm output settings
- Webpage and display settings
- System time and communication time settings



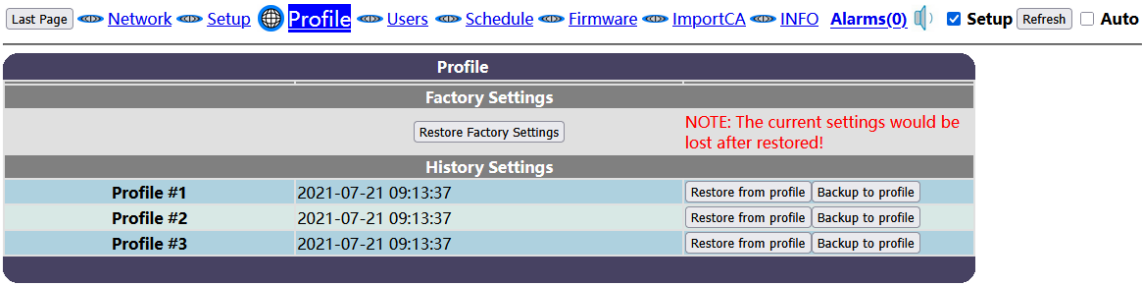
The following table describes the parameters on this page.

Parameter		Description
Alarm Output	Enabled Beep	Used to enable or disable the buzzer.
	Enabled Relay	Optional hardware function. Used to connect to an audible-visual alarm device for quick alarm location.
	Alarm to Snmp Trap	Specifies whether to send SNMP Trap.

Parameter		Description
	Snmp Query Timeout (s)	SNMP heartbeat packet. If an SNMP data packet is not received within the set time period, an SNMP heartbeat packet will be sent. When set to 0, no heartbeat packet will be sent.
	Keep Alive Trap Cycle (s)	Specifies the interval for sending SNMP heartbeat packets.
	Alarm to Email	Used to enable or disable alarm emails.
Web page	Web Auto Refresh Time (s)	Available when **Auto** in the upper right corner of the page is selected.
	Web Life Time (s)	If no actions are taken during this time period, the login will be automatically exited.
	LCD Life Time (s)	Specifies the automatic turn-off time for display backlight. When set to 0, the backlight stays on constantly.
	LCD Rotation	Specifies the display direction.
System	System time	The system time supports both manual and automatic input: - Manual input: Fill in according to the format on the right. - Automatic input: Click **Load Computer Time**.
	Modbus Address	Specifies the communication address of the PDU for serial communication.
	NTP Setting	Used to synchronize the network time.  - NTP Time Server: NTP network time server - Time offset: time zone - Sync: used to synchronize the network time immediately

3.12.4 Backup and Restore

Log in to the PDU management page, click **Profile** under **System** in the left menu bar to access the Profile page.



On this page, you can:

- Restore to factory settings: Click **Restore Factory Settings** to restore all settings to default. Note that all current settings will be lost after this operation. Settings backup in advance is recommended.
- Back up settings: In the **History Settings** module, you can click **Backup to profile** in a data line to save the current settings in a profile.

NOTE

Three backup files are provided by default. You can back up settings in these files, or restore the settings to those backed up in the files. The middle column displays the backup time.

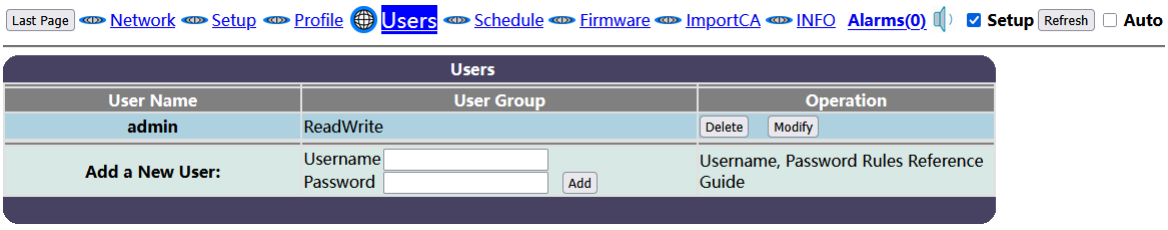
- Restore to backup settings: In the **History Settings** module, you can click **Restore from profile** in a data line to restore settings to the backup settings. Note that all current settings will be lost after this operation. Settings backup in advance is recommended.

3.12.5 User settings

Log in to the PDU management page, click **Users** under **System** in the left menu bar to access the Users page. On this page, you can add, modify, and delete users.

NOTE

The username and password can only use characters from a-z, A-Z, 0-9, ._-()#@ , and are limited to no more than 20 characters.



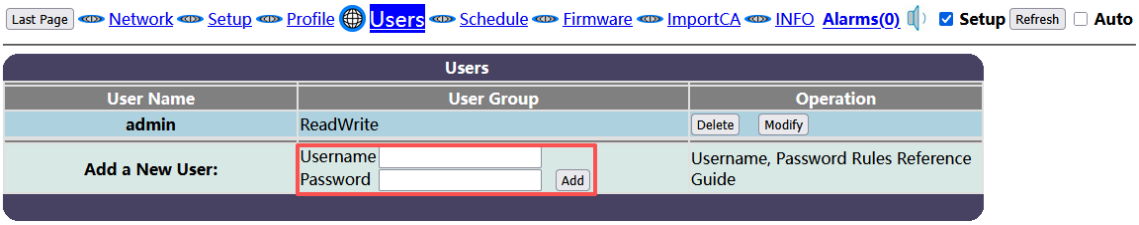
3.12.5.1 Add a user

Step 1 Log in to the PDU management page.

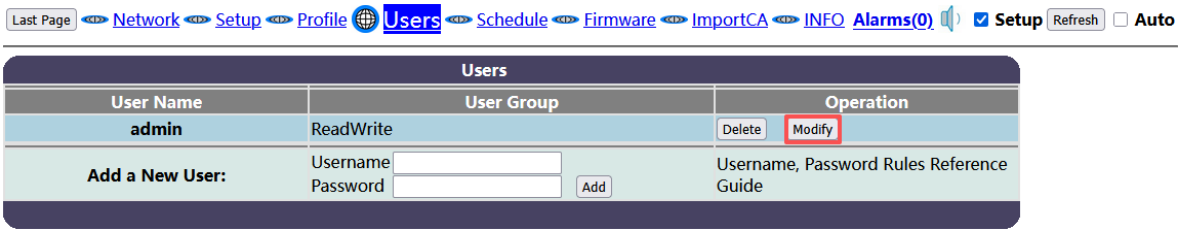
Step 2 Click **Users** under **System** in the left menu bar to access the Users page.

Step 3 Enter a username after **Add a New User**, and click **Add**.

test is named for example.



Step 4 Click **Modify** in the line of **test**.

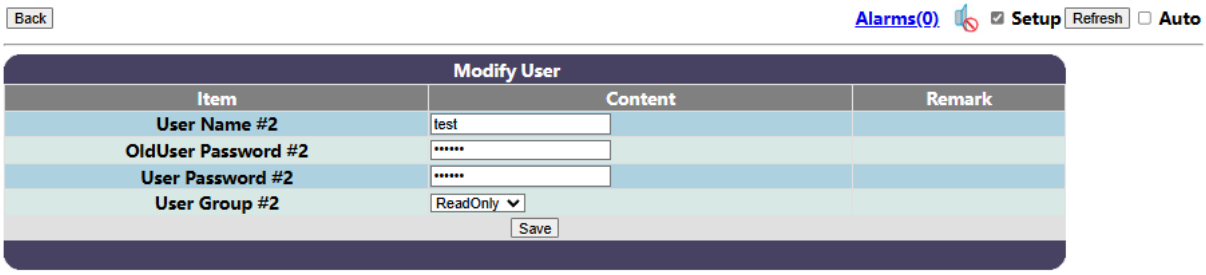


Step 5 Set the password and user group as required, and click **Save**.

NOTE

ReadWrite: Administrator used to read status and settings, and write settings

ReadOnly: General user used to read state and settings only



–End

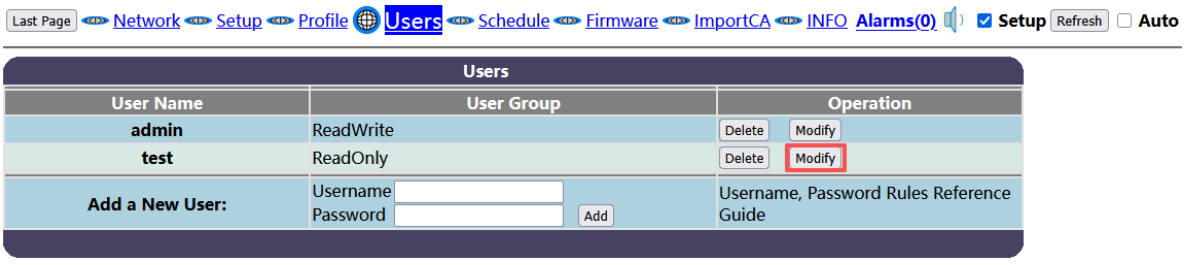
3.12.5.2 Modify a user

Step 1 Log in to the PDU management page.

Step 2 Click **Users** under **System** in the left menu bar to access the Users page.

Step 3 Click **Modify** in the line of the user to be modified.

User **test** is used for an example.

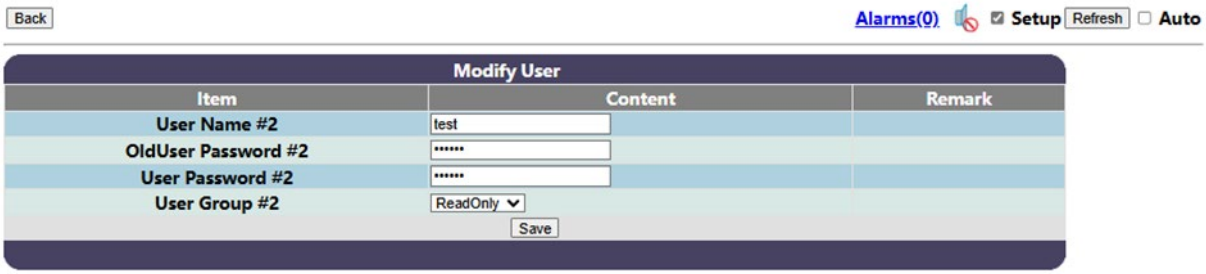


Step 4 Modify the password and user group as required, and click **Save**.

NOTE

ReadWrite: Administrator used to read status and settings, and write settings

ReadOnly: General user used to read state and settings only



–End

3.12.5.3 Delete a user

NOTE

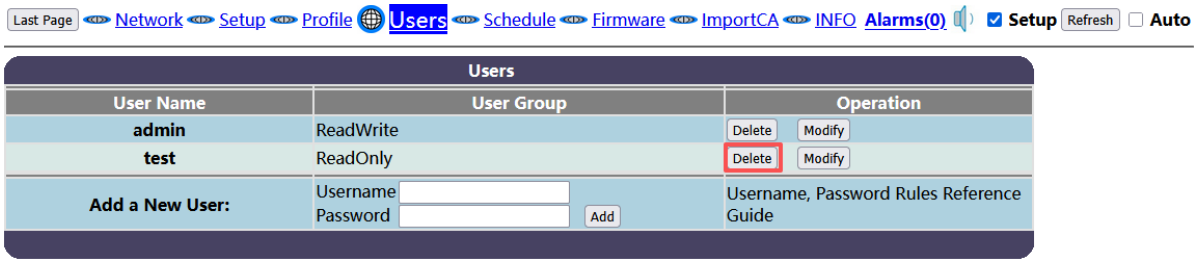
Administrators can delete all users. However, at least one administrator must be left for the system. If only one administrator exists in the system, this administrator cannot be deleted.

Step 1 Log in to the PDU management page.

Step 2 Click **Users** under **System** in the left menu bar to access the Users page.

Step 3 Click **Delete** in the line of the user to be deleted.

User **test** is used for an example.



–End

3.12.6 Schedule settings

Log in to the PDU management page, click **System** in the left menu bar, and then click **Schedule** in the top title bar to access the Schedule page. On this page, you can perform PDU ON/OFF schedule settings.

NOTE

A maximum of eight schedules can be set.

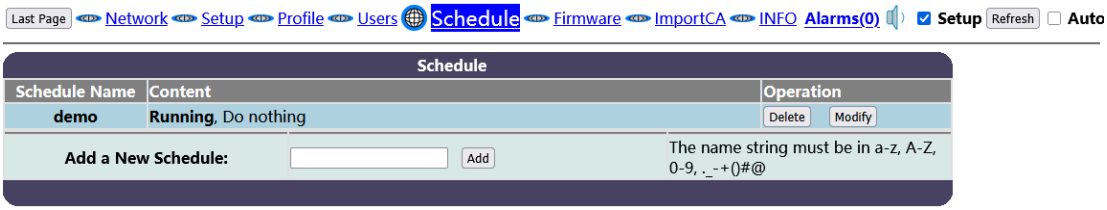
3.12.6.1 Add a schedule

Step 1 Log in to the PDU management page.

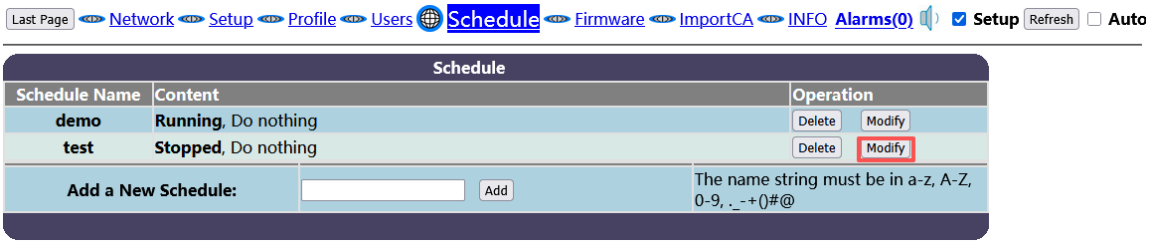
Step 2 Click **System** in the left menu bar, and then click **Schedule** in the top title bar to access the Schedule page.

Step 3 Enter a schedule name after **Add a New Schedule**, and click **Add**.

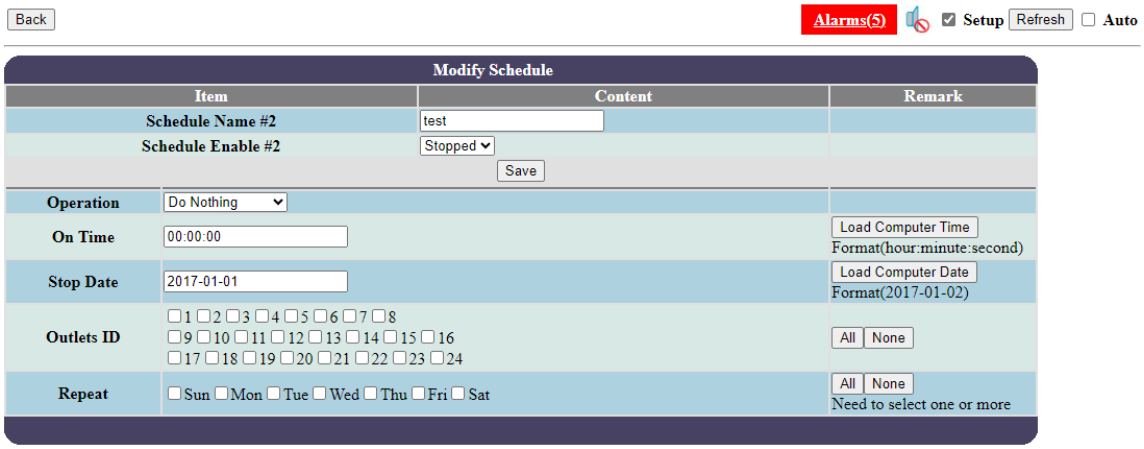
test is named for example.



Step 4 Click **Modify** in the line of **test**.



Step 5 Set parameters as required, and click **Save**.



The following table describes the parameters on this page.

Parameter	Description
Schedule Enable	Used to enable or disable the current schedule.
Operation	Select schedule operations as required.
On Time	Specifies the time for schedule operations.
Stop Date	Specifies the date on which the schedule ends.
Outlets ID	Specifies the outlets for which the schedule is performed.

Parameter	Description
Repeat	Specifies the days on which the schedule is performed. At least one day must be selected.

–End

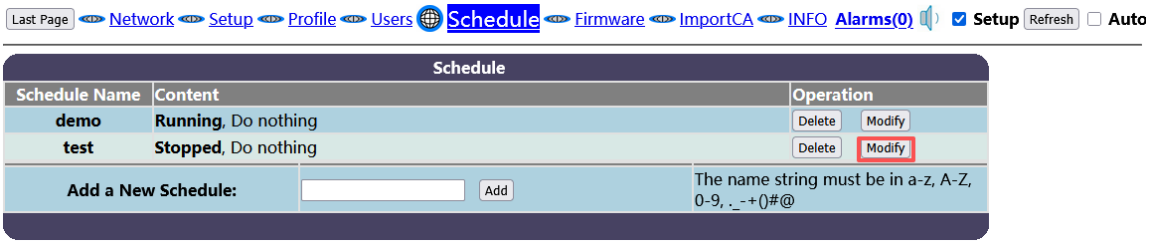
3.12.6.2 Modify a schedule

Step 1 Log in to the PDU management page.

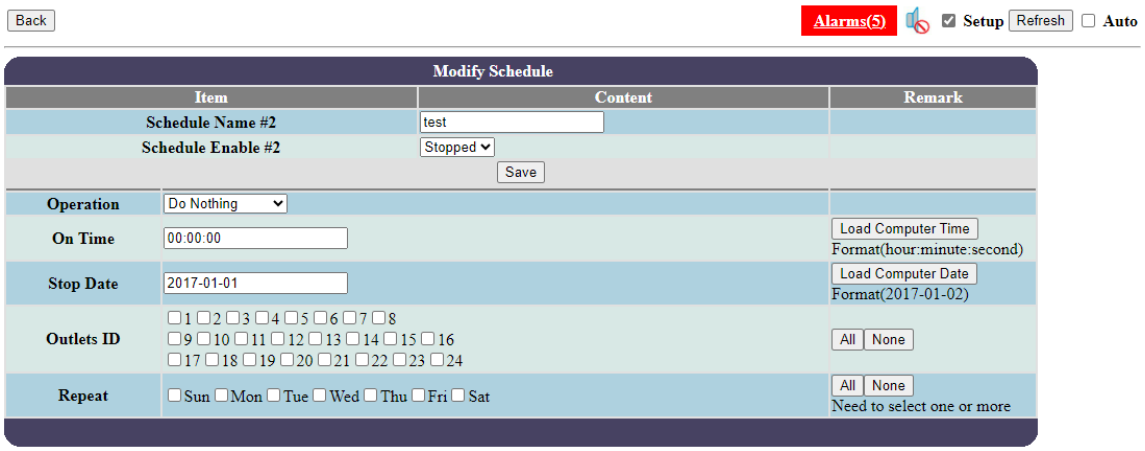
Step 2 Click **System** in the left menu bar, and then click **Schedule** in the top title bar to access the Schedule page.

Step 3 Click **Modify** in the line of the schedule to be modified.

test is used for example.



Step 4 Set parameters as required, and click **Save**.



For parameter description, see Add a schedule.

–End

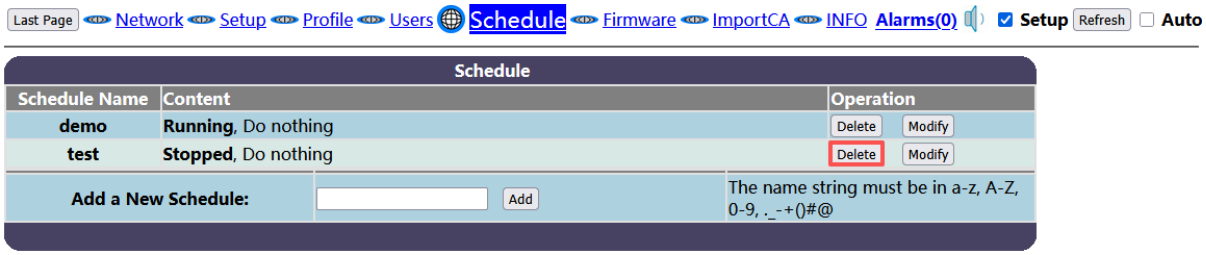
3.12.6.3 Delete a schedule

Step 1 Log in to the PDU management page.

Step 2 Click **System** in the left menu bar, and then click **Schedule** in the top title bar to access the Schedule page.

Step 3 Click **Delete** in the line of the schedule to be modified.

test is used for example.



–End

3.12.7 Firmware

Step 1 Log in to the PDU management page.

Step 2 Click **System** in the left menu bar, and then click **Firmware** in the top title bar to access the Upload page.

Step 3 Click **Choose File**, and select the upgrade file.

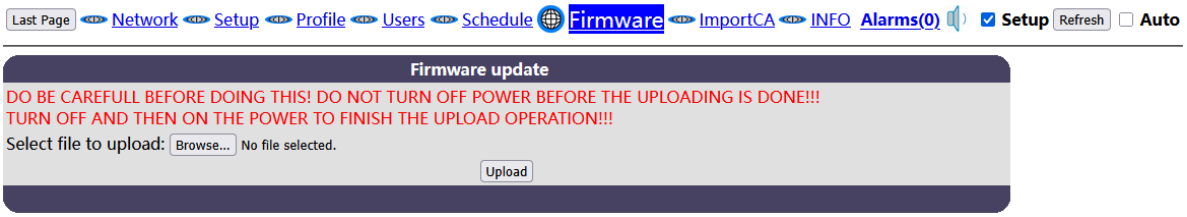
NOTE

To obtain the upgrade file, contact our service personnel.

The upgrade file is an application firmware upgrade package suffixed with **.enc** (binary file), such as **net-power.version.bin.tar.enc**. The system will be restarted automatically after the file is uploaded.

Other types of files cannot be recognized and processed..

Step 4 Click **Upload**.



–End

3.12.8 Import a CA certificate

NOTE

The newly imported CA certificate will take effect upon next HTTPS connection. System restarting is not required.

Step 1 Log in to the PDU management page.

Step 2 Click **System** in the left menu bar, and then click **ImportCA** in the top title bar to access the ImportCA page.

Step 3 Click **Choose File**, and select the certificate files.

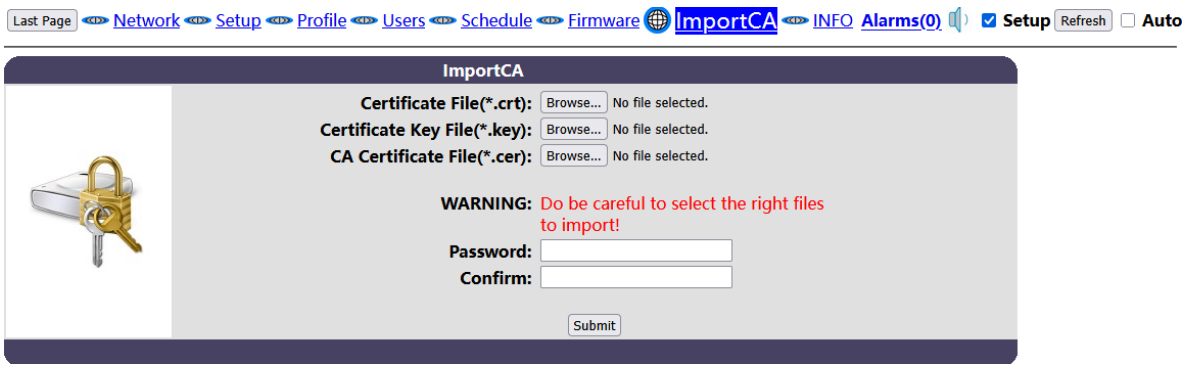
NOTE

Users need to apply for the CA certificate from relevant organizations. The CA certificate contains three types of documents, all of which must be uploaded.

Step 4 Enter passwords, and click **Submit**.

NOTE

The password is required. For the certificate with a password, enter its password. For the certificate without a password, enter two strings of similar digits.



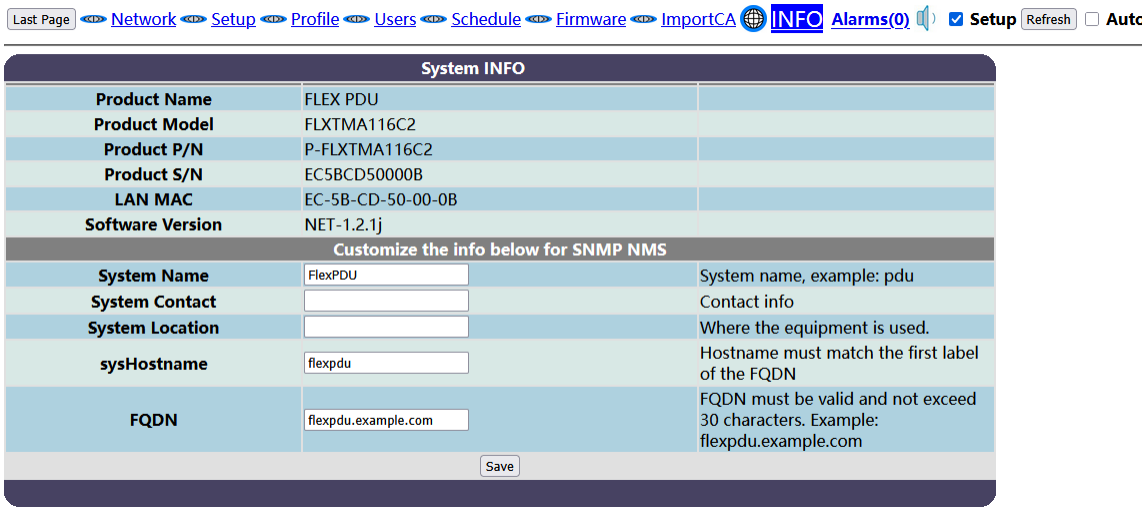
–End

3.12.9 View/Modify system information

Log in to the PDU management page, click **System** in the left menu bar, and then click **INFO** in the top title bar to access the INFO page. On this page, you can view system information and set product information (including system name, system contact, and system location) for SNMP.

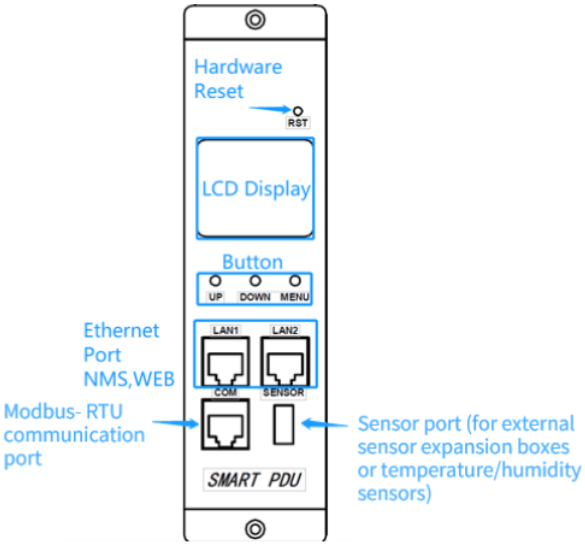
NOTE

To set product information for SNMP, the setup mode must be enabled.

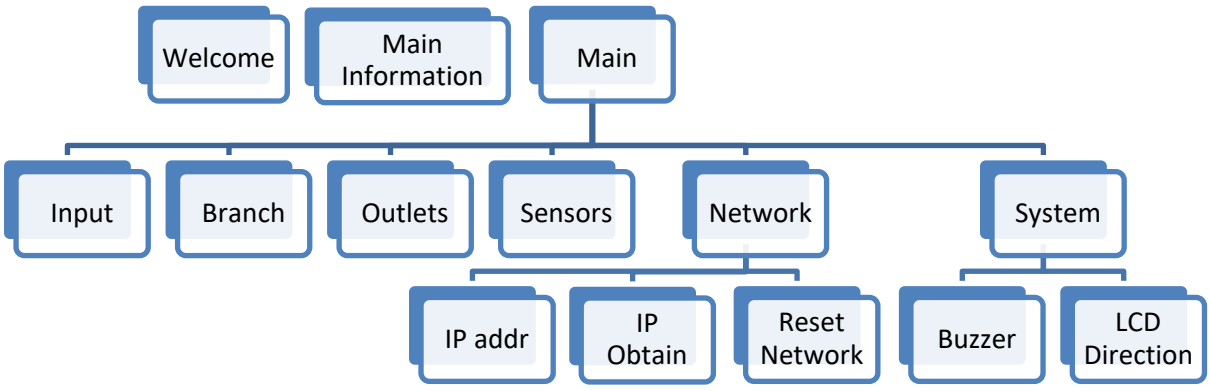


4 Use the PDU LCD panel

The following figure shows the PDU LCD panel.

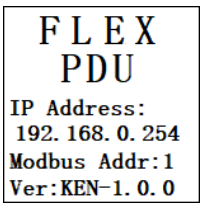


Users can perform operations using the PDU LCD panel. The following figure shows the menu structure of the LCD panel.



4.1 Welcome page and monitoring information page

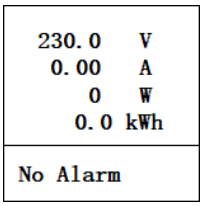
After the PDU is powered on, the Welcome page is displayed by default, as shown in the following figure.



The Welcome page displays:

- PDU's IP address: Used to connect the computer to the PDU through the network port
- Modbus RTU address: Used to connect to the PDU through serial communication
- Software version

On this page, press the **UP** or **DOWN** button to enter the monitoring information page, as shown in the following figure.

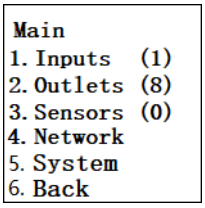


The monitoring information page displays the input voltage, current, active power, energy, and alarm of the PDU. On this page, press the **UP** or **DOWN** button to enter the Welcome page.

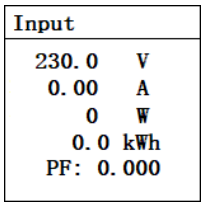
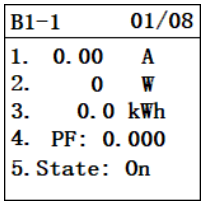
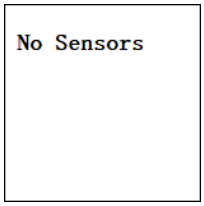
4.2 Menu

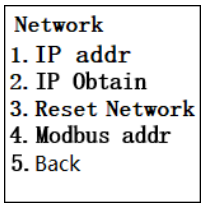
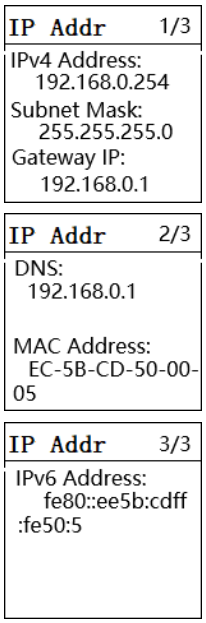
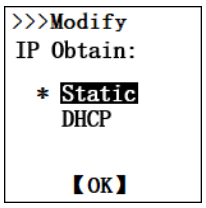
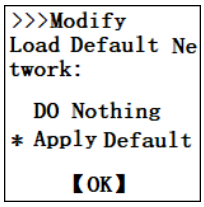
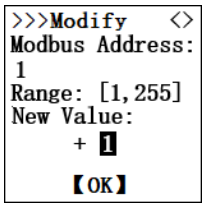
After the PDU is powered on, press the **MENU** button and enter the LCD password to access the main menu, as shown in the following figure. The LCD password is **111111** by default and can be changed by following LCDPassword.

following figure shows the main menu. The digit in the parentheses indicates the quantity of the item.



On this page, press the **UP** or **DOWN** button to select a menu item, and then press the **MENU** button to enter the page. If nothing is selected, the page returns to the monitoring information page. After entering the submenu, select **Back** and then press **MENU** or directly press **MENU** when no menu is selected to return to the main menu.

Level-2 menu	Level-3 menu	Description
Input 	/	Displays the total input monitoring value. For three-phase PDUs, the monitoring values of each phase are displayed on separate pages.
Outlets 	/	Displays the outlet status. Press **UP** or **DOWN** to view the status of other outlets.
Sensor 	/	Displays the sensor status. Press **UP** or **DOWN** to view the status of other sensors.

Level-2 menu	Level-3 menu	Description
Network 	IP address 	Displays the IPv4 and IPv6 addresses.
	IP Obtain 	Use a static IP or obtain IP automatically.
	Reset network 	Used to restore factory settings, including the username, password, and IP address, and enable HTTP.
	Modbus Address 	Modify Modbus communication address.
System	Buzzer	Used to enable/disable the buzzer. Select **Buzzer** and press **MENU** to change the ON/OFF status. – On: Enable the buzzer. – Off: Disable the buzzer.

Level-2 menu	Level-3 menu	Description
System 1. Buzzer (On) 2. LCD(Normal) 3. Back	LCD	Used to select the LCD direction. Select **LCD** and press **MENU** to change the Normal/Reverse status.

5 Use the command line to manage the PDU

The PDU uses Telnet protocol (unencrypted) and SSH protocol (encryption protocol) to perform command line management function.

5.1 Connect to Telnet

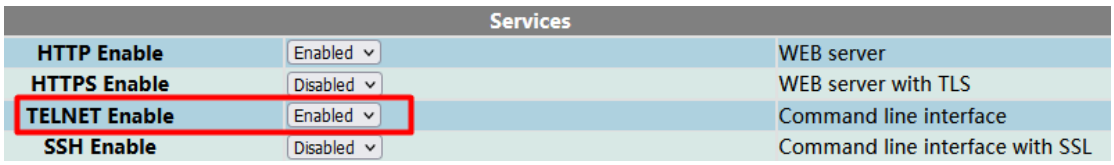
Step 1 Use a network cable to connect the LAN port of PDU to your computer, or use a router for connection.

NOTE

Set network parameters of your computer to access the PDU. If the PDU and your computer are located in the same LAN, set the IP address of your computer in the same network segment with the IP address of the PDU; otherwise, use a correct router or network bridge to connect the PDU.

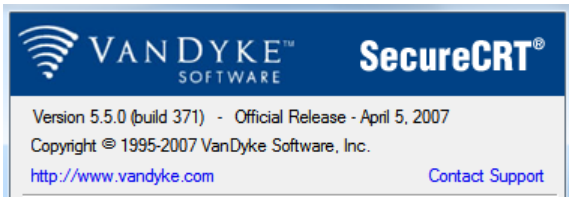
Step 2 Enable the Telnet service of the PDU.

Log in to the management page of the PDU, access the Network page, set **TELNET Enable** to **Enabled**, and click **Apply Network Settings**. For details, see Enable/Disable network services.



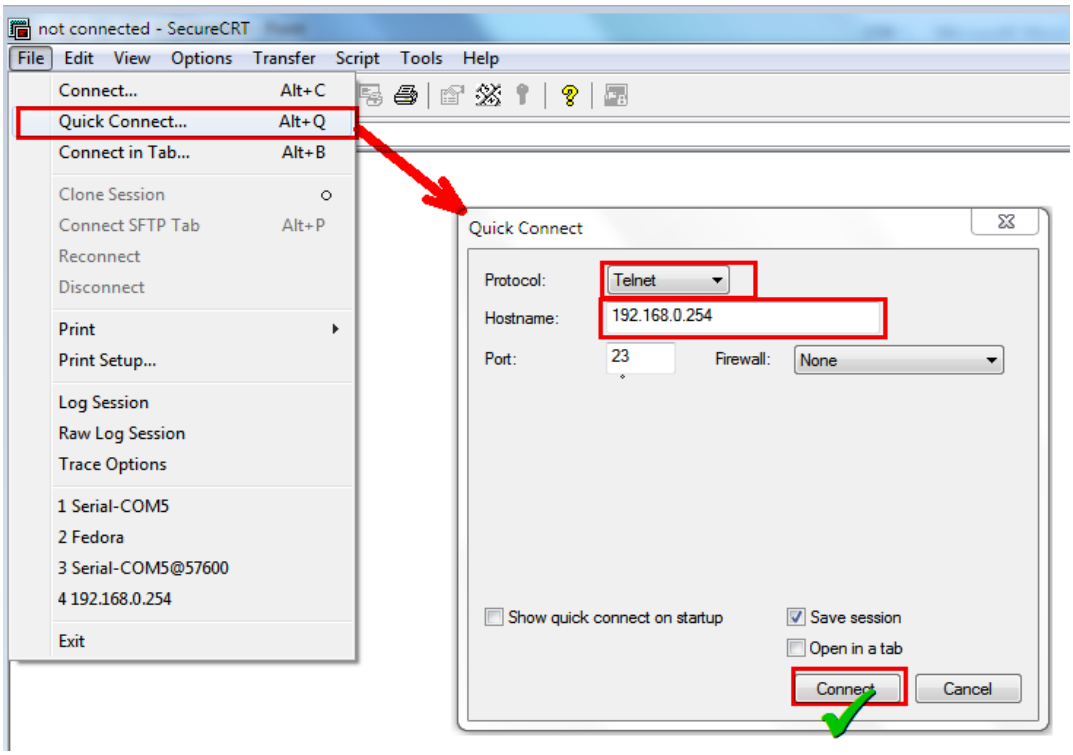
Step 3 Run the command line terminal on your computer.

The available software includes SecureCRT, Putty, and FinalShell. SecureCRT is used for example here with the following version.

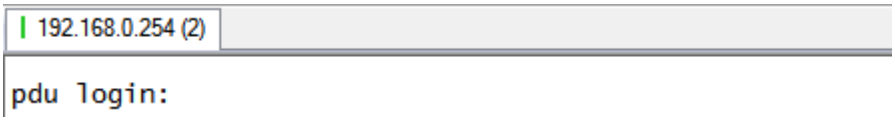


Step 4 Set connection parameters.

1. Enter the IP address of the PDU (**192.168.0.254** for example), and select the Telnet protocol and set the default port 23.

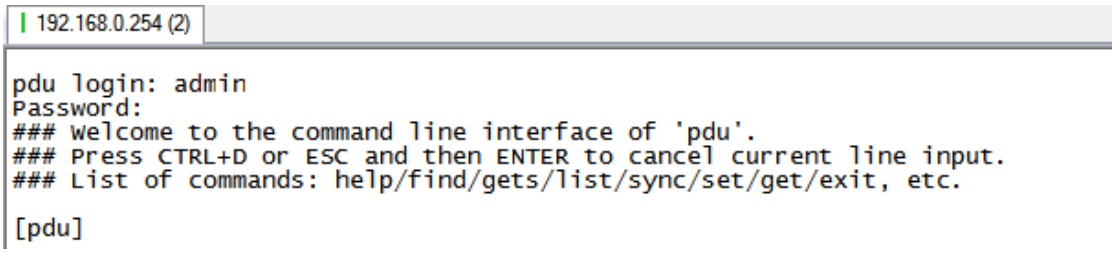


2. Click **Connect**. The **pdu login** prompt is displayed.



Step 5 Log in to the Telnet terminal of the PDU.

Enter the default username (**admin**) and password (**admin**) and press **Enter** to log in. The operation description buttons and commands are displayed, as shown in the following figure.



NOTE

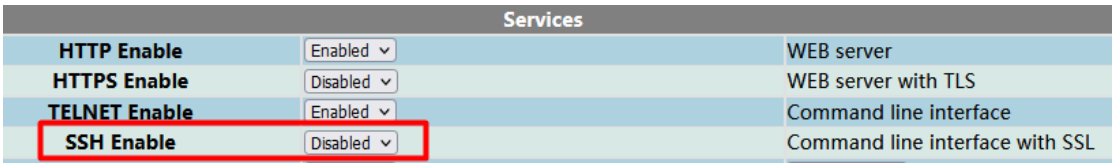
if no command is input for a long time (about 2 minutes), the terminal will automatically exit.

–End

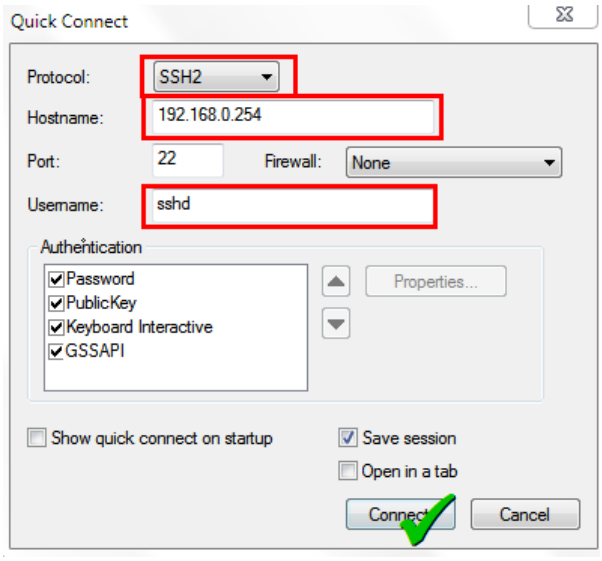
5.2 Connect to SSH

The method for connecting to the PDU through SSH is almost similar to that through Telnet, while the steps for enabling the SSH service (step 2) and setting connection parameters (step 4) are different.

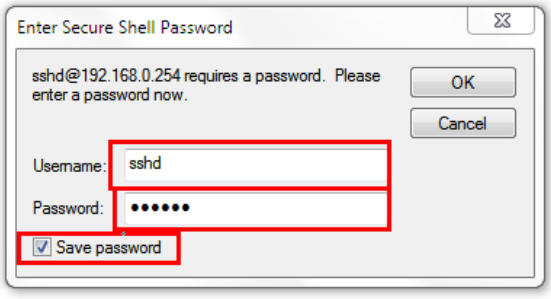
- Enabling the SSH service of PDU: Log in to the management page of the PDU, access the Network page, set **SSH Enable** to **Enabled**, and click **Apply Network Settings**. For details, see Enable/Disable network services.

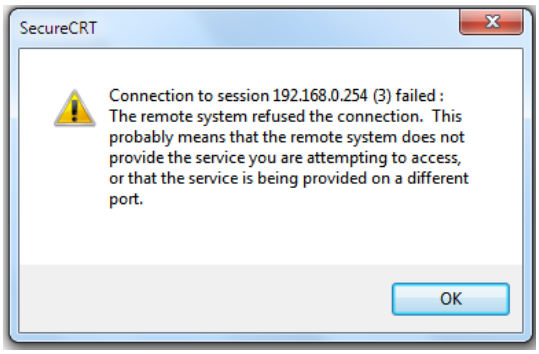


- Setting connection parameters: Select the SSH2 protocol and default port 22.

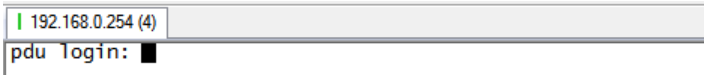


Click **Connect**. The following results may occur.

Connection result	Description
	After successful connection, the **Enter Secure Shell Password** dialog box is displayed. The default username is **sshd** and default password is **123456**. You can select **Save password** to save the account password.

Connection result	Description
	If the connection fails, an error prompt will be displayed. Check whether the firewall settings are correct and whether the communication port is occupied or disabled, and try connection again.

After successful connection, the **pdu login** prompt will be displayed.



Enter the username and password (same with Telnet) to log in to the PDU.

5.3 Regular instruction for command line

- Input is not case sensitive (except username and password).
- The **DELETE**/**UP**/**DOWN**/**LEFT**/**RIGHT**/**HOME**/**END** keys cannot be used in the command line terminal. If you have used the keys, the current input will be cancelled.
- The **TAB** key can be used to recall history commands. A maximum of eight history commands can be recorded.
- **Object** indicates the management object. These objects are sorted by serial number. The object name and object serial number function similarly for input. Generally, all commands are operated based on the objects.
- To query command description, carry out the **help** command. For details, see Help command.
- To find an object, carry out the **find** command.
- Administrators can read and write objects, and read-only users can view objects only.

5.4 Command instructions

5.4.1 Help command

```
[pdu] help
Help to command:
      [set]   object values #set value to a single object
      [get]   object       #get value of a single object
      gets/g  [range]      #get values of objects
      sync/s  [range]      #sync objects from other applications
      list/l  [range]      #list properties of objects
      list/l  object       #list detail properties of a single object
      find/f   string         #find the objects which name partial match the
'string'
      hist/h              #show the history commands
      help/?              #show help messages
      exit/x              #exit this application

      *** Expression of object ***
      softVer             #using name, 'softVer' is an example
      softVer.0           #using name with element index
      12                   #using identifier number, '12.0' is the same with
'12'
      12.3               #using identifier number with element index
      .                  #dot punctuation present the last object used

      *** Expression of range of objects ***
      softVer 34          #using name and number, [softVer, 34]
      12 34              #using numbers only, [12, 34]
      12                 #the same as [12,12]

      *** Examples ***
      find usern          #find object *usern*, we can find 'userName'
      list 12 34          #list objects from 12 to 34
      get softVer         #get value of object 'softVer'
      softVer            #the same as above
      .                  #get the last object
      set addUser Jack myPw #set object with 2 values
      addUser Jack        #set object 'addUser' to value 'Jack'
      set userName.2 Rose   #set the 2nd element of object 'userName'
      set . Angel         #set the last object to 'Angel'

      *** Navigation and notes ***
      The read only user has not right to set most objects.
      The DELETE/UP/DOWN/LEFT/RIGHT/HOME/END keys are not used here.
      Press CTRL+D or ESC or BACKSPACE then ENTER to cancel current line
input.
      Press TABs first then ENTER to call out the history command (Total 8
```

```
items).
       Application would quit automatically if more than 120 seconds without
any user input.
```

The following table describes some related commands.

Command	Description
[set] [get]	Indicates that you do not need to enter a command. If it is followed by only one object, it means that the **get** command is executed. If it is followed by two or more objects, it means that the **set** command is used.
gets/g	Indicates the **gets** command, which can be abbreviated as **g**.
[range]	Indicates the object range. For example, **10 20** (with a space in the middle) indicates objects 10 to 20.

5.4.2 Find and view object attributes

Step 1 Use the **find** command to find the object.

soft is used as an example to query the software version. Object 57 with a similar name is found.

```
[pdu] f soft

NO.  Object Name
+=== +=============
057) SoftVer
```

Step 2 Use the **list** command to list object attributes.

```
[pdu] list 57
Object properties
       NO.         :057 Number of object
       Name        :SoftVer  Name of object
       Description :Software Version Description of object
       Elements    :1  (Array member has only one member)
       Data Type   :String Type of object : character string
       Access      :Read Only  Reading attribute of object, which is
read-only here
       Unit        :  Unit of object
       Length      :[0, 10], The length of the object , which is
character string here, so the length can be 0 to 10 characters
```

–End

5.4.3 Read object data

You can use the **gets** or **get** command to read the information. Results of the two commands differs with output formats. The **gets** command can obtain a range of data.

- Using the **gets** command

```
[pdu] gets 57
NO.  Object Name           Index Values
+=== +====================== +==== +=====================
057) SoftVer                    NET-1.2.1j
```

- Using the **get** command

  For example, directly enter the object serial number **57** without entering the **get** command:

```
[pdu] 57
NET-1.2.1j
```

5.4.4 Set object data

Object **OutletSwitch** is used as an example.

Step 1 Use the **list** command to get the object attributes.

```
[pdu] list OutletSwitch
Object properties
       NO.         :100
       Name        :OutletSwitch
       Description :Switch
       Elements    :8
       Data Type   :EnumText
       Access      :Read/Write
       Unit        :
       Value List  :OFF(0),ON(1), Numerical representation method of object, 1
represents "ON"
```

Step 2 Use the **gets** command to obtain the object data.

```
[pdu] gets OutletSwitch

NO.  Object Name           Index Values
+=== +====================== +==== +=====================
100) OutletSwitch       [  0] ON
                        [  1] ON
                        [  2] ON
                        [  3] ON
                        [  4] ON
                        [  5] ON
                        [  6] ON
                        [  7] ON
```

According to the query result, the switch state of eight outlets in total is **ON**.

Step 3 Set one of the switches to **OFF**, and then check the object data again.

```
[pdu] set OutletSwitch.1 0
### OK!
```

```
[pdu] gets OutletSwitch

NO.  Object Name           Index Values
+=== +====================== +==== +======================
100) OutletSwitch        [  0] ON
                         [  1] OFF
                         [  2] ON
                         [  3] ON
                         [  4] ON
                         [  5] ON
                         [  6] ON
                         [  7] ON
```

The query result indicates that the setting is successful.

–End

5.4.5 Synchronize object attributes

When the object attributes are modified, use the **sync** command to update object data.

```
[pdu] sync
Sync properties of
objects.....................................................................
177 objects are synchronized OK and 0 are failed.
```

5.4.6 Use object names and serial numbers

Objects can be represented with names or serial numbers. To obtain the object names and serial numbers, see Instructions for PDU management objects. The following figure shows an example.

```
[pdu] f outletswitch

NO.  Object Name
+=== +=============
100) OutletSwitch   # The object number is 100, and object name is
"OutletSwitch"
[pdu] get outletswitch.1  # get the state of No. 1 (the second) switch, which
is "OFF"
OFF
[pdu] get 100.1  get the state of # No.1 (the second) switch, which is "OFF" -
which is replaced with object number, which has the same effect.
OFF
```

5.4.7 Use a dot to indicate the last used object

```
[pdu] get outletswitch.1  get the state of # No.1 (the second) switch, which is
"OFF"
OFF
[pdu] set outletswitch.1 1  #set to state of "ON(1)"
### OK!    #setting is successful
[pdu] get outletswitch.1 # set to "ON" state successfully
ON
[pdu] set . 0  # Use a dot to indicate the current object to set it to OFF
state.
### OK!
[pdu] get outletswitch.1  # the previous object has been set to OFF state.
OFF
```

5.5 Instructions for PDU management objects

Use the **list** command without entering any more objects, all objects can be listed.

When the page is full, the prompt is as follows. Select "All" to display all the contents.

```
-- Show more [Y<ENTER>/N<SPACE>/A(All)?]a
```

```
[pdu] list
Sync properties of objects...Ok
216 objects are synchronized OK and 0 are failed.

NO.  Object Name           Count Type      Access
+=== +====================== +==== +========= +===========
000) Pduc                 [  1] Integer    Read/Write  Note: quantity of all the
objects
+=== +====================== +==== +========= +===========Note: User management
005) AddUser              [  1] String     Read/Write
006) DeleteUser           [  1] String     Read/Write
007) ModifyUserName       [  1] String     Read/Write
008) ModifyUserPW         [  1] String     Read/Write
009) ModifyUserGroup      [  1] String     Read/Write
010) UserName             [  1] String     Read/Write
011) UserPassword         [  1] String     Read/Write
012) UserGroup            [  1] String     Read/Write
013) UserCount            [  1] Integer    Read Only
+=== +====================== +==== +========= +===========Note: SNMP management
022) SnmpReadCommunity    [  1] String     Read/Write
023) SnmpWriteCommunity   [  1] String     Read/Write
024) SnmpTrapManagers     [  4] String     Read/Write
025) SnmpTrapCommunities  [  4] String     Read/Write
026) SnmpV1Enabled        [  1] EnumText   Read/Write
027) SnmpV2Enabled        [  1] EnumText   Read/Write
028) SnmpV3Enabled        [  1] EnumText   Read/Write
029) SnmpPortNumber       [  1] Integer    Read Only
030) SnmpUsmUser          [  2] String     Read/Write
031) SnmpSecurityLevel    [  2] EnumText   Read Only
032) SnmpAccessRight      [  2] EnumText   Read Only
033) SnmpAuthAlgo         [  2] EnumText   Read/Write
034) SnmpAuthPassword     [  2] String     Read/Write
035) SnmpPrivAlgo         [  2] EnumText   Read/Write
036) SnmpPrivPassword     [  2] String     Read/Write
037) SnmpContextName      [  2] String     Read Only
038) SnmpEngineID         [  2] String     Read Only
+=== +====================== +==== +========= +===========Note: Serial Port
Communication Modbus
040) ModbusAddr           [  1] Integer    Read/Write
```

```
+=== +====================== +==== +========= +===========Note: Setting backup
of management
044) BackupConf            [  3] String    Read/Write
045) RestoreConf           [  3] String    Read/Write
046) LoadFactoryConf       [  1] EnumText   Read/Write
+=== +====================== +==== +========= +===========Note: Alarm
management

047) AlarmClear            [  1] String    Read/Write
048) AlarmCount            [  1] Integer   Read Only
049) BeepEnable            [  1] EnumText   Read/Write
050) RelayEnable           [  1] EnumText   Read/Write
051) EventCode             [  1] Integer   Read Only
052) EventTime             [  1] String    Read Only
053) EventLevel            [  1] EnumText   Read Only
054) EventDetail           [  1] String    Read Only
055) SourceType            [  1] String    Read Only
056) SourceId              [  1] String    Read Only
+=== +====================== +==== +========= +===========Note: Product
Information
057) SoftVer               [  1] String    Read Only
058) ProdName              [  1] String    Read Only
059) ProdModel             [  1] String    Read Only
060) ProdPN                [  1] String    Read Only
061) ProdSN                [  1] String    Read Only
062) ProdMAC               [  1] String    Read Only
063) SystemName            [  1] String    Read/Write
064) SystemContact         [  1] String    Read/Write
065) SystemLocation        [  1] String    Read/Write
+=== +====================== +==== +========= +===========Note: Input power
supply management
066) PowerFrequency        [  1] Integer   Read Only
067) PowerAccEnergy        [  1] Float     Read Only
068) PowerConnectAlarm     [  1] EnumText   Read Only
069) PowerPhaseVolt        [  1] Float     Read Only
070) PowerPhaseLoad        [  1] Float     Read Only
071) PowerActivePower      [  1] Float     Read Only
072) ReactivePower         [  1] Float     Read Only
073) ApparentPower         [  1] Float     Read Only
074) RatedPower            [  1] Float     Read Only
075) RemainingPower        [  1] Float     Read Only
076) PowerFactor           [  1] Float     Read Only
077) PowerPhaseEnergy      [  1] Float     Read Only
078) PowerInvertJoined     [  1] EnumText   Read Only
079) PowerLLimit           [  1] Float     Read/Write
080) PowerLoadLowAlarm     [  1] EnumText   Read Only
081) PowerHLimit           [  1] Float     Read/Write
```

```
082) PowerLoadHighAlarm      [  1] EnumText   Read Only
083) VoltageLLimit           [  1] Float      Read/Write
084) VoltageLowAlarm         [  1] EnumText   Read Only
085) VoltageHLimit           [  1] Float      Read/Write
086) VoltageHighAlarm        [  1] EnumText   Read Only
087) BreakerName             [  1] String     Read/Write
088) BreakerAlarm            [  1] EnumText   Read Only
089) PowerOnInterval         [  1] Integer    Read/Write
090) OptionName              [  4] String     Read Only
091) OptionDescr             [  4] String     Read Only
092) RatedTotalLoad          [  1] Integer    Read Only
093) PowerPhaseNumber        [  1] EnumText   Read Only
095) OutletTotalCount        [  1] Integer    Read Only
096) TotalAddress            [  1] String     Read/Write
097) SocketType              [ 48] EnumText   Read Only
098) SocketID                [ 48] String     Read/Write
+=== +====================== +==== +========= +============ Note: Outlets
management
099) OutletFuse              [ 24] EnumText   Read Only
100) OutletSwitch            [ 24] EnumText   Read/Write
101) OutletHLimit            [ 24] Float      Read/Write
102) OutletLLimit            [ 24] Float      Read/Write
103) OutletLoad              [ 24] Float      Read Only
104) OutletName              [ 24] String     Read/Write
105) OutletConnectAlarm      [ 24] EnumText   Read Only
106) OutletEnergy            [ 24] Float      Read Only
107) OutletPower             [ 24] Float      Read Only
108) OutletPf                [ 24] Float      Read Only
109) OutletDescr             [ 24] String     Read/Write
110) OutletMoveUp            [  1] Integer    Read/Write
111) OutletMoveDown          [  1] Integer    Read/Write
+=== +====================== +==== +========= +===========Note: Sensor
management
112) SensorName              [  0] String     Read/Write
113) SensorType              [  0] EnumText   Read Only
114) SensorAddress           [  0] Integer    Read Only
115) SensorAlarm             [  0] EnumText   Read Only
116) SensorAlarmEn           [  0] EnumText   Read/Write
117) SensorStatus            [  0] String     Read Only
118) SensorTemLLimit         [  0] Float      Read/Write
119) SensorTemHLimit         [  0] Float      Read/Write
120) SensorHumLLimit         [  0] Float      Read/Write
121) SensorHumHLimit         [  0] Float      Read/Write
122) SensorWindLLimit        [  0] Float      Read/Write
123) SensorWindHLimit        [  0] Float      Read/Write
124) SensorWindScale         [  0] Float      Read/Write
125) TemUnitType             [  1] EnumText   Read/Write
```

```
126) WindUnitType           [  1] EnumText   Read/Write
127) RescanSensor           [  1] EnumText   Read/Write
+===   +======================   +====   +=========   +===========Note:   Branch
management
128) BranchHLimit           [  1] Float     Read/Write
129) BranchLoad             [  1] Float     Read Only
130) PowerBranchVolt        [  1] Float     Read Only
131) BranchEnergy           [  1] Float     Read Only
132) BranchActivePower      [  1] Float     Read Only
133) BranchPowerFactor      [  1] Float     Read Only
134) BranchConnectAlarm     [  1] EnumText   Read Only
+=== +====================== +==== +========= +===========Note: Network
parameter
135) IpAddr                 [  1] String    Read/Write
136) IpMask                 [  1] String    Read/Write
137) IpGate                 [  1] String    Read/Write
138) IpDns1                 [  1] String    Read/Write
139) IpDns2                 [  1] String    Read/Write
140) IpObtain               [  1] EnumText   Read/Write
146) HttpEn                 [  1] EnumText   Read/Write
147) HttpsEn                [  1] EnumText   Read/Write
148) TelnetEn               [  1] EnumText   Read/Write
149) SshEn                  [  1] EnumText   Read/Write
150) SnmpEn                 [  1] EnumText   Read/Write
153) ResetNetwork           [  1] EnumText   Read/Write
154) ApplyNetwork           [  1] EnumText   Read/Write
+=== +====================== +==== +========= +===========Note: WiFi management
155) WifiAddr               [  1] String    Read/Write
156) WifiMask               [  1] String    Read/Write
157) WifiGate               [  1] String    Read/Write
158) WifiDns1               [  1] String    Read/Write
159) WifiDns2               [  1] String    Read/Write
160) WifiObtain             [  1] EnumText   Read/Write
161) WifiSSID               [  1] String    Read/Write
+=== +====================== +==== +========= +===========Note: Email sending
management
163) SmtpServer             [  1] String    Read/Write
164) SmtpPort               [  1] Integer   Read/Write
165) SenderEmail            [  1] String    Read/Write
166) SenderPassword         [  1] String    Read/Write
167) SenderAuthType         [  1] EnumText   Read/Write
168) ToAddress              [  4] String    Read/Write
+=== +====================== +==== +========= +=========== Note: Radius
169) RadiusAuthServer       [  1] String    Read/Write
170) RadiusAuthPort         [  1] Integer   Read/Write
171) RadiusAuthSecret       [  1] String    Read/Write
```

```
+=== +====================== +==== +========= +===========Note: Socket grouping
management
172) GroupClear             [  8] EnumText   Read/Write
173) GroupName              [  8] String     Read/Write
174) AddGroup               [  8] Integer    Read/Write
175) RemoveGroup            [  8] Integer    Read/Write
176) GroupCount             [  8] Integer    Read Only
177) GroupSwitch            [  8] String     Read/Write
178) GroupLoad              [  8] Float      Read Only
179) GroupEnergy            [  8] Float      Read Only
180) GroupLLimit            [  8] Float      Read/Write
181) GroupHLimit            [  8] Float      Read/Write
+=== +====================== +==== +========= +===========Note: main PDU
management
183) AddHost                [  1] String     Read/Write
184) DeleteHost             [  1] String     Read/Write
185) ModifyHostName         [  1] String     Read/Write
186) ModifyHostUri          [  1] String     Read/Write
187) HostName               [  0] String     Read/Write
188) HostUri                [  0] String     Read/Write
189) HostCount              [  1] Integer    Read Only
+=== +====================== +==== +========= +===========Note: Removable
socket management
190) AddUnit                [  1] String     Read/Write
191) DeleteUnit             [  1] String     Read/Write
192) ModifyUnitAddr         [  1] String     Read/Write
193) ModifyUnitName         [  1] String     Read/Write
194) UnitAddr               [  1] String     Read/Write
195) UnitName               [  1] String     Read/Write
196) UnitCount              [  1] Integer    Read Only
+=== +====================== +==== +========= +===========Note: Communication
management
197) Qos                   [ 34] String     Read Only
198) QosClear              [ 34] EnumText   Read/Write
+=== +====================== +==== +========= +===========Note: miscellanea
199) AlarmToSnmpTrap        [  1] EnumText   Read/Write
200) SnmpQueryTimeout       [  1] Integer    Read/Write
201) TrapKeepAliveCycle     [  1] Integer    Read/Write
202) AlarmToEmail           [  1] EnumText   Read/Write
203) WebAutoRefreshTime     [  1] Integer    Read/Write
204) WebPageLifeTime        [  1] Integer    Read/Write
205) LcdLanguage            [  1] EnumText   Read/Write
206) LcdRotation            [  1] EnumText   Read/Write
207) LcdLifeTime            [  1] Integer    Read/Write
208) Time                   [  1] String     Read/Write
209) TimeServer             [  1] String     Read/Write
210) TimeZone               [  1] EnumText   Read/Write
```

```
211) NtpSync                [  1] Integer    Read/Write
212) SyncTime               [  1] String     Read Only
213) Reboot                 [  1] EnumText   Read/Write
214) Restart                [  1] EnumText   Read/Write
215) Capw                   [  1] String     Read/Write
216) Rootpw                 [  1] String     Read/Write
```

6 Use SNMP to manage the PDU

The PDU supports the SNMP v1, v2c, and v3.

Through MIB files, PDUs can be connected to the third-party SNMP network management system (NMS), for example, Solarwinds, WhatsUp, CiscoWorks, and HP OpenView.

The MIB browser is used as an example to show the management interface function of PDU and how to view and set management objects of the PDU through SNMP.

6.1 Connect to SNMP

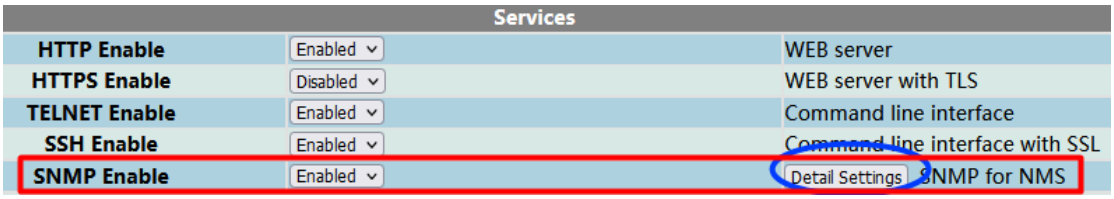
Step 1 Use a network cable to connect the LAN port of PDU to your computer, or use a router for connection.

NOTE

Set network parameters of your computer to access the PDU. If the PDU and your computer are located in the same LAN, set the IP address of your computer in the same network segment with the IP address of the PDU; otherwise, use a correct router or network bridge to connect the PDU.

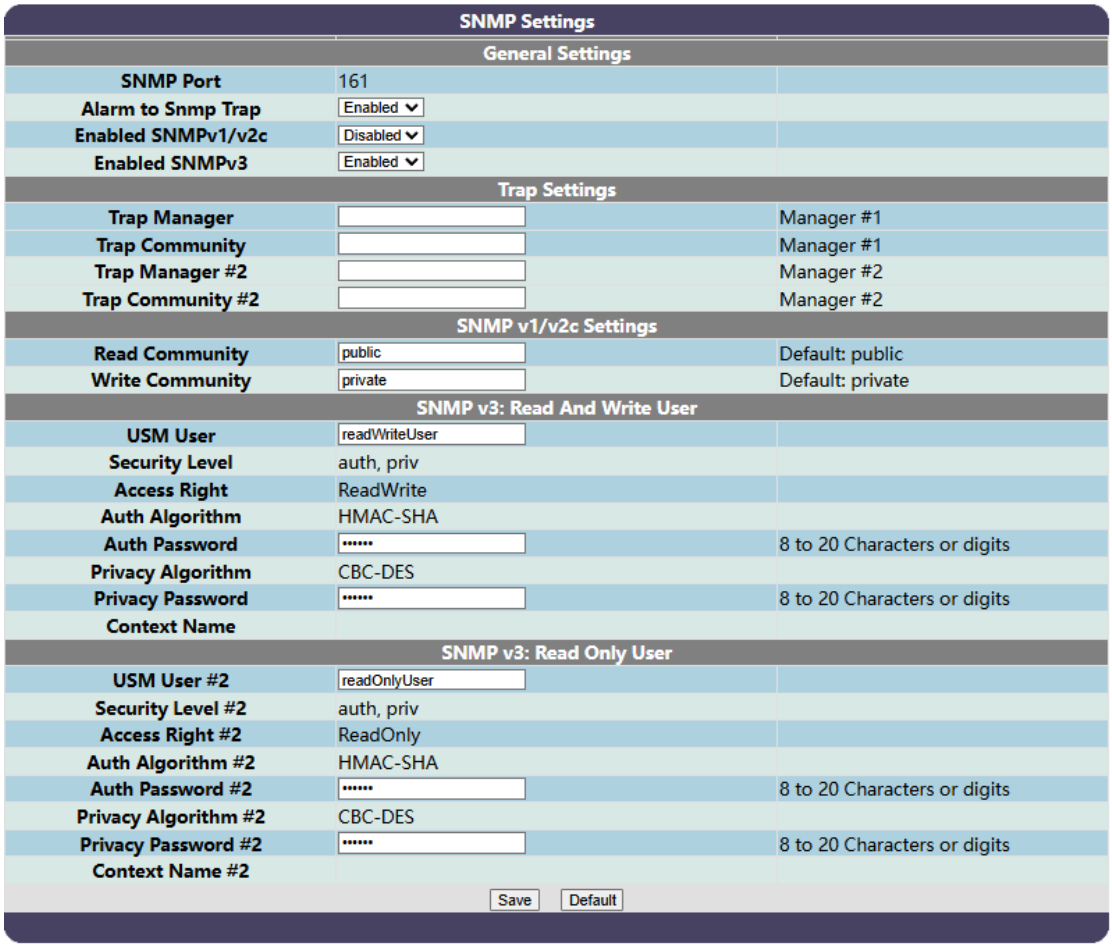
Step 2 Enable the SNMP service of PDU.

1. Log in to the PDU management page, access the Network page, and set **SNMP Enable** to **Enabled**.



2. Click **Detail Settings** in the line of **SNMP Enable**. Enable corresponding SNMP version and Trap function. Set SNMP parameters for the PDU, and click **Save**.

For different network applications, set SNMP parameters accordingly. For details, see Enable/Disable network services.



- General Settings
  - Alarm to Snmp Trap: Used to enable/disable the function of sending alarm Trap to the network. The network management IP address can be set in the **Trap Settings** module.
  - Enabled SNMP v1/v2c/v3: Used to enable/disable the SNMP version. Settings for v1/v2c can be performed in the **SNMP v1/v2c Settings**. Settings for v3 can be performed in the **SNMP v3: Read And Write User** module. By default, two security users are provided.

Username	Description
readWriteUser	Read and write
readOnlyUser	Read-only

Only encrypted passwords can be set. Other access parameters cannot be added and modified. The passwords must be set with at least eight characters.

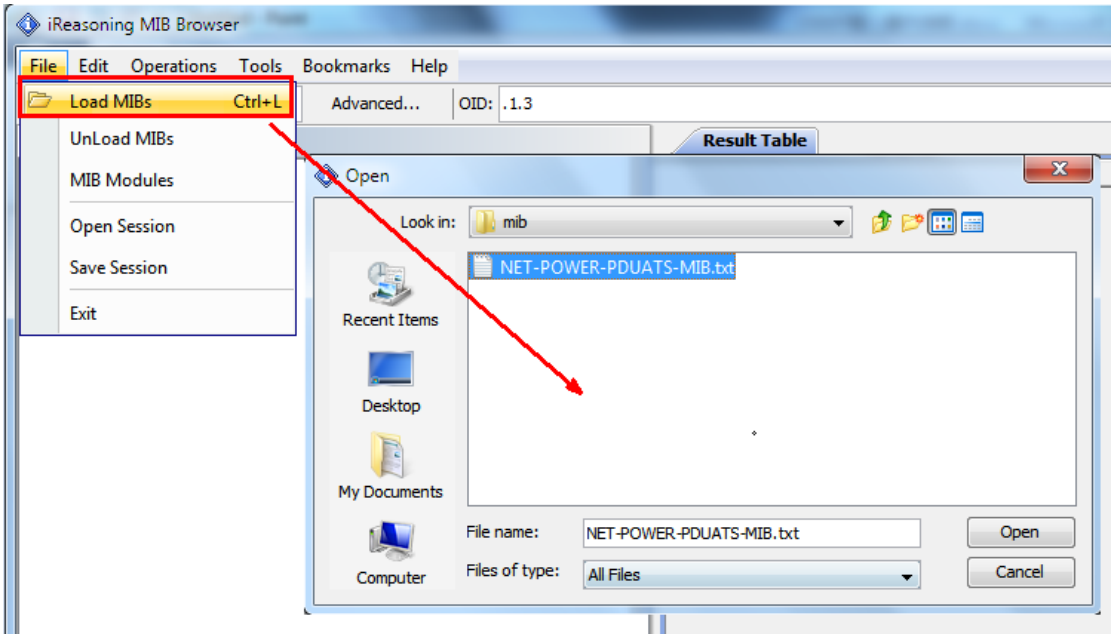
3. Click **Back**, and then click **Apply Network Settings**.

Step 3 Open the MIB browser on your computer.

Available software includes iReasoning MIB Browser and ManageEngine MibBrowser. iReasoning MIB Browser with the following version is used for example here.

Step 4 Upload the PDU's MIB file to the MIB Browser.

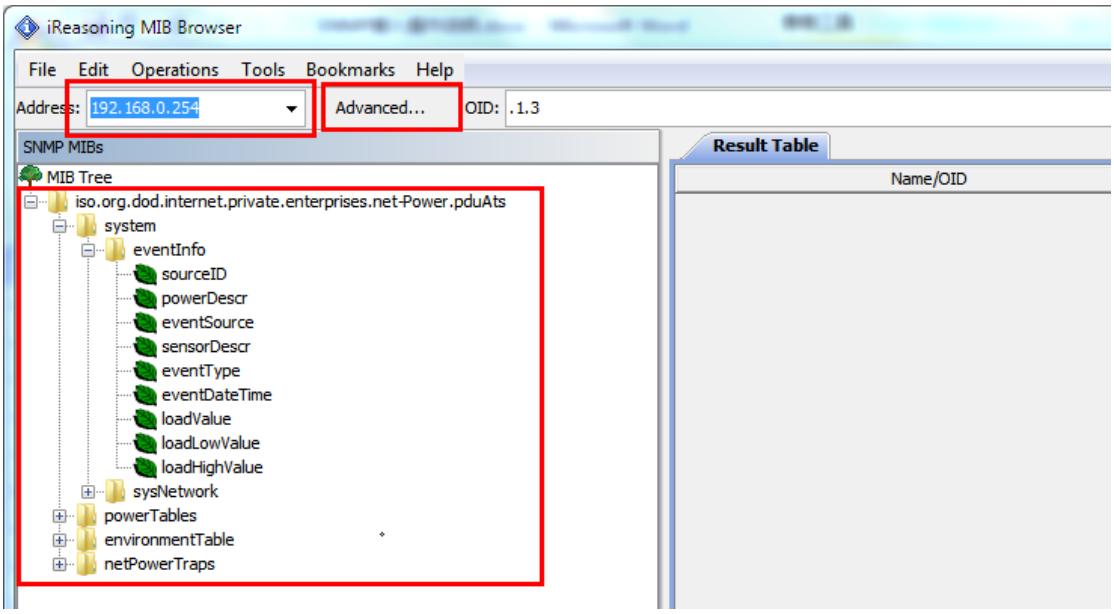
The MIB file **NET-POWER-PDUATS-MIB.txt** is used for example.



–End

6.2 Set connection parameters

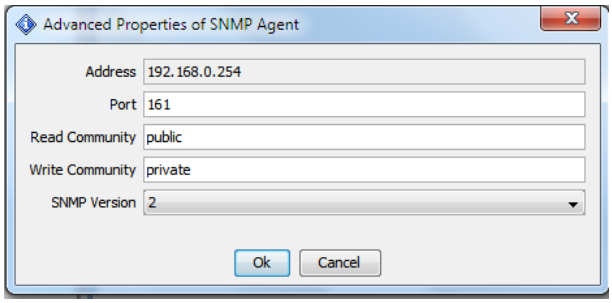
Step 1 In the MIB browser, enter the PDU's IP address (**192.168.0.254** for example) in the address bar, and click **Advanced…** to access connection settings.



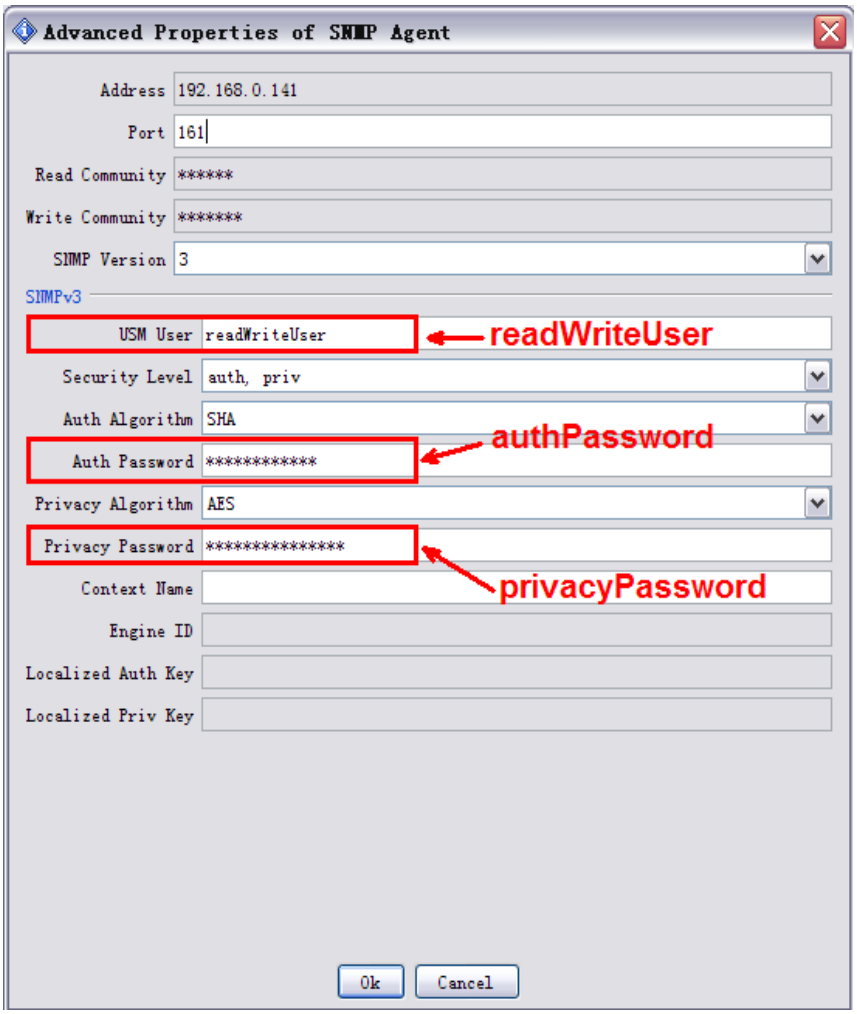
Step 2 Select the SNMP version, and set parameters as required.

- Set **SNMP Version** to **1** or **2** to set connection parameters of SNMP v1 or v2c. Default community information is as follows.

Default read community: **Read Community**	public
Default write community: **Write Community**	private



- Set **SNMP Version** to **3** to set connection parameters of SNMP v3. Set parameters according to the following figure, including **USM User**, **Security Level**, **Auth Algorithm**, and **Auth Password**. For user **readWriteUser**, the default authentication password is **authPassword**, and the default encryption password is **privacyPassword**.


Advanced Properties of SNMP Agent
Address
192.168.0.141
Port
161
Read Community
******
Write Community
****
SNMP Version
3
SNMPv3
USM User
readWriteUser
readWriteUser
Security Level
auth, priv
Auth Algorithm
SHA
Auth Password
****
authPassword
Privacy Algorithm
AES
Privacy Password
****
privacyPassword
Context Name
Engine ID
Localized Auth Key
Localized Priv Key
Ok
Cancel

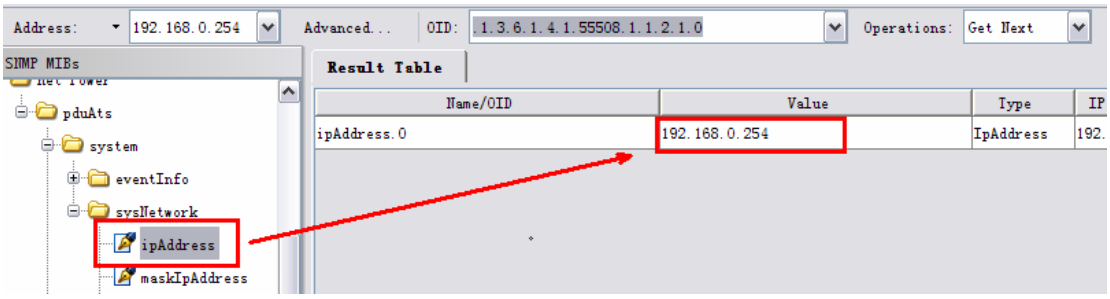
–End

6.3 Example: Read and set management objects

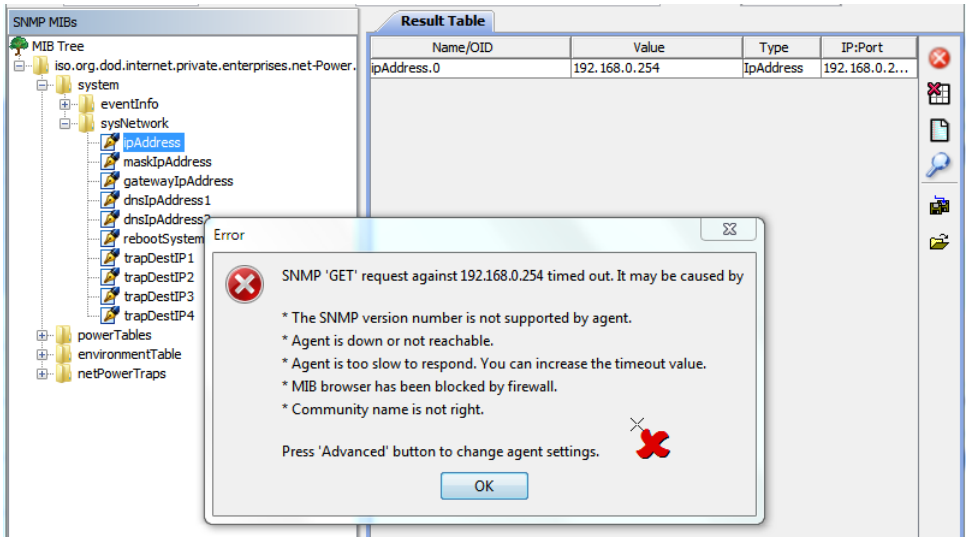
The management object (OID: Object Identifier) configurations vary with PDUs, therefore the corresponding MIB files are different. One type of PDU is used as an example here to show how to read the PDU's IP address and outlet current and set outlet switches.

6.3.1 Read the IP address

Locate the IP address object **ipAddress**. Double-click it to send a read command. If the read result is shown in the right window, the IP address is read successfully.



If the connection fails or the SNMP parameters do not match, a read error prompt will be displayed within 10 seconds.



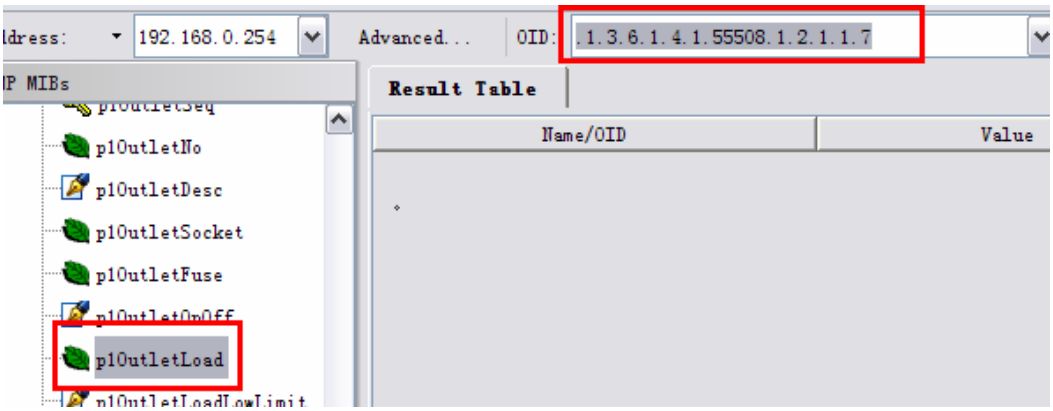
If a read error occurs, perform the following operations:

- Use a network cable to connect the PDU to the network to check whether the network connection is normal.
- Check whether the settings of Read community and Write community are consistent with those on the PDU.
- Check whether the SNMP port number 161 is occupied.

6.3.2 Read outlet current

Select an outlet under the **powerTables** directory, the OID will be displayed in the **OID** textbox on the right.

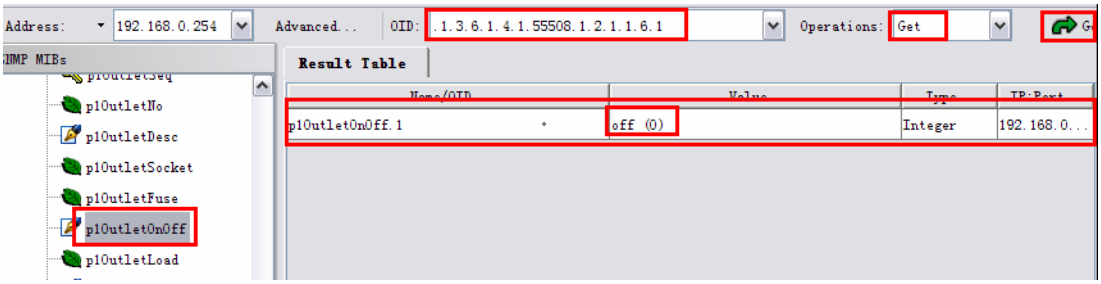
p1OutletLoad under the **powerTables/power1OutletTable** directory is used for example here.



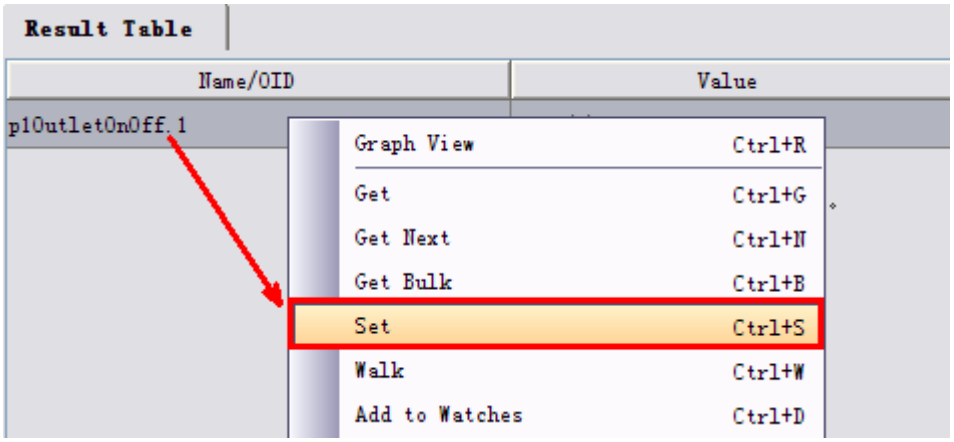
The OID is a table element, therefore the corresponding serial number must be entered for accessing the outlet. By default, **0** indicates the first object and **1** indicates the second object. For example, to access the second outlet, add the serial number **.1** in the textbox. Then, select **Get** for **Operations**, and click **Go** to obtain the current attributes of outlet 1.

6.3.3 Set outlet switches

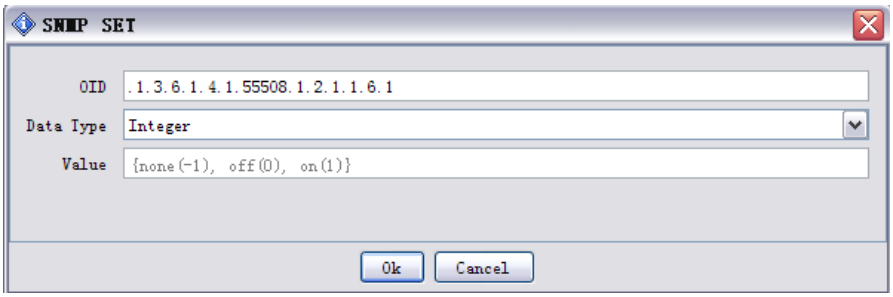
Select an outlet OID (**p1OutletOnOff** for example). Read the outlet status by referring to Read outlet current. The read result is **off(0)**.

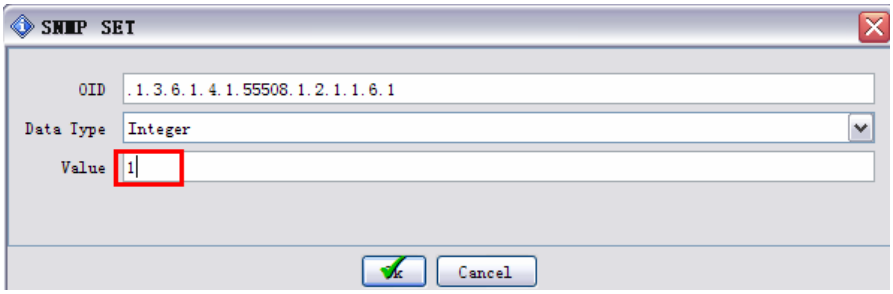


In the result table, right-click the status information of the outlet switch, and select **Set** in the short-cut menu.

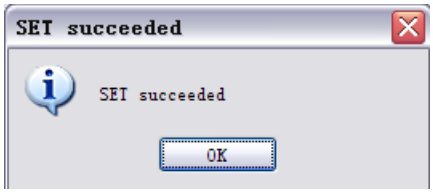


Enter **1** (on) for **Value**, and click **OK**.

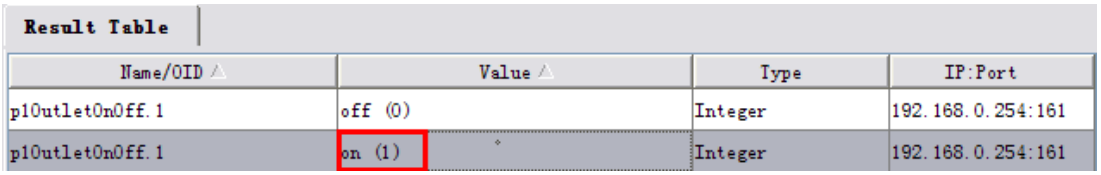




A success message is displayed.



Obtain the outlet status again. Now the switch status is displayed as **on(1)**.



Result Table

Name/OID	Value	Type	IP:Port
p10utletOnOff.1	off (0)	Integer	192.168.0.254:161
p10utletOnOff.1	on (1)	Integer	192.168.0.254:161

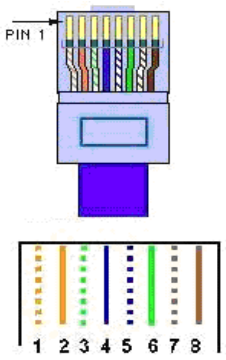
7 Use the serial port terminal to manage the PDU

The PDU supports the Modbus protocol based on RS485 bus standard and conforms to the GB/T 19582-2008 standard.

7.1 Physical port

The serial communication port is adapted with standard RS485. Asynchronous Information transmission mode is adopted (one start bit, eight data bits, one stop bit, no verification). Data transfer rate is 9600 bit/s.

Lines of the communication port COM are defined as follows:

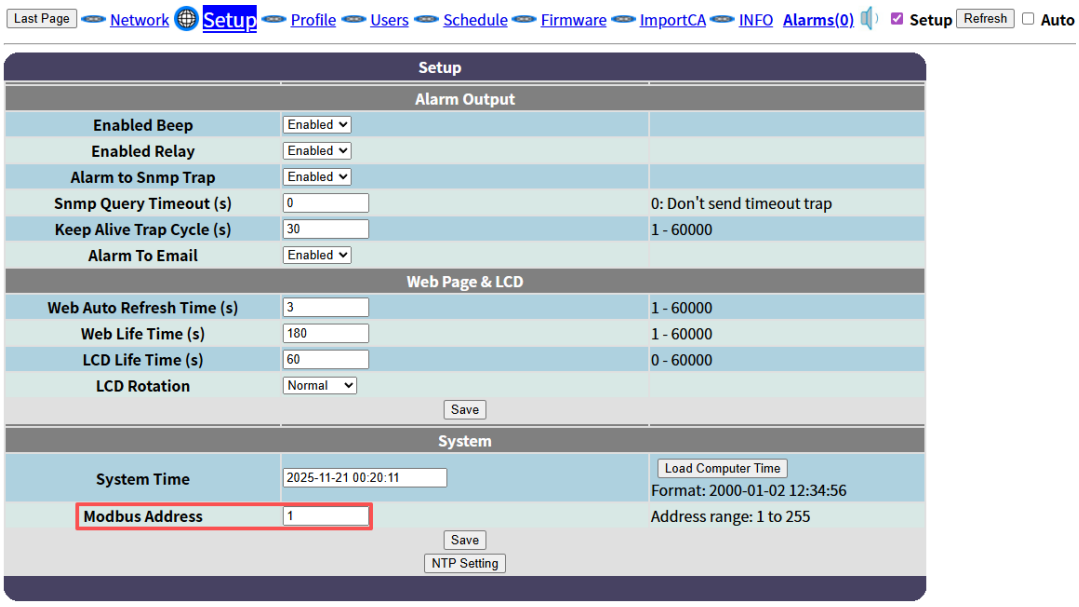


Line No.	Color	Function
1	Orange and white	NC
2	Orange	NC
3	Green and white	NC
4	Blue	RS485-A
5	Blue and white	RS485-B
6	Green	NC
7	Brown and white	NC
8	Brown	GND

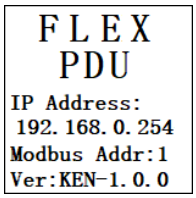
7.2 Obtain PDU's communication address

To obtain the PDU communication address:

- Method 1: Log in to the PDU management page, and obtain the Modbus address from **/System/Setup**. For details, see System settings.



- Method 2: Obtain the Modbus address from the Welcome page of the PDU LCD panel.



7.3 Modbus parameter addresses

Modbus RTU is a standard communication protocol. Based on RS485 bus transmission, users can read data using the Modbus address table. Modbus Poll can be used.

NOTE

Unless stated, the following data are decimal numbers.

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
I.	Rated information and metering parameters: 03H function code reading								
1	Manufacturer	Use the string form	\	\	0-3	Read	=Register	8	
2	Model	For example: HVPDU63-2-32(01)	\	\	4-19	Read	=Register	32	Reserved
3	Current hardware version	A-Z	\	\	20	Read	=Register	2	
4	Current software version	100-999	\	\	21	Read	=Register	2	
5	Communication protocol version	0x100-0x999	\	\	22-23	Read	H_Register: large version L_Register: small version	4	
6	Software compilation time	YYYYMMDD character string	\	\	24-27	Read	=Register	8	
7	Rated Voltage	220/380	220/380	V	28	Read	=Register	2	Used for judging one or three-phase PDU
8	Rated Current	100	16/32/63	A	29	Read	=Register	2	
9	Rated Frequency	50	50	Hz	30	Read	=Register	2	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
10	Numbers of output	48	\	\	31	Read	=Register	2	
11	Switch Function of output	0-1	\	\	32	Read	0: No; 1: Yes	2	
12	Current Measuring Function of output	0-1	\	\	33	Read	0: No; 1: Yes	2	
13	Electrical Degree Measuring Function of output	0-1	\	\	34	Read	0: No; 1: Yes	2	Include Active Power, Power Factor of Output
14	Voltage Value (One Phase)	0-350	\	V	35	Read	=Register	2	
15	Current Value (One Phase)	0-700	\	A	36	Read	=Register/10	2	
16	Active Power (One Phase)	0-65535	\	W	37	Read	=Register	2	
17	Reactive Power (One Phase)	0-65535	\	W	38	Read	=Register	2	
18	Power Factor (One Phase)	0-1000	\	\	39	Read	=Register/1000	2	
19	General Active Electrical Degree	0-9999999	\	kWh	40-41	Read	=Register_L/10 + Register_H*65536/10	4	
20	Frequency	4500-6500	\	Hz	42	Read	=Register/100	2	
21	L1 Voltage Value (Three- Phase)	0-350	\	V	43	Read	=Register	2	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
22	L2 Voltage Value (Three- Phase)	0-350	\	V	44	Read	=Register	2	
23	L3 Voltage Value (Three- Phase)	0-350	\	V	45	Read	=Register	2	
24	L1 Current Value (Three- Phase)	0-700	\	A	46	Read	=Register/10	2	
25	L2 Current Value (Three- Phase)	0-700	\	A	47	Read	=Register/10	2	
26	L3 Current Value (Three- Phase)	0-700	\	A	48	Read	=Register/10	2	
27	L1 Active Power (Three- Phase)	0-65535	\	W	49	Read	=Register	2	
28	L2 Active Power (Three- Phase)	0-65535	\	W	50	Read	=Register	2	
29	L3 Active Power (Three- Phase)	0-65535	\	W	51	Read	=Register	2	
30	L1 Reactive Power (Three-Phase)	0-65535	\	W	52	Read	=Register	2	
31	L2 Reactive Power (Three-Phase)	0-65535	\	W	53	Read	=Register	2	
32	L3 Reactive Power(Three-Phase)	0-65535	\	W	54	Read	=Register	2	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
33	L1 Power Factor(Three-Phase)	0-1000	\	\	55	Read	=Register/1000	2	
34	L2 Power Factor (Three- Phase)	0-1000	\	\	56	Read	=Register/1000	2	
35	L3 Power Factor (Three- Phase)	0-1000	\	\	57	Read	=Register/1000	2	
36	1 Current of output	0-700	\	A	58	Read	=Register/10	2	
...	...	...	\	A	...	...	...	...	
83	48 Current of output	0-700	\	A	105	Read	=Register/10	2	
84	1 Electrical Energy of output	0-9999999	\	kWh	106-107	Read	=Register_L/10 + Register_H*65536/10	4	
...	...	...	\	kWh	...	...	...	...	
131	48 Electrical Energy of output	0-9999999	\	kWh	200-201	Read	=Register_L/10 + Register_H*65536/10	4	
132	1 Active Power of output	0-65535	\	W	202	Read	=Register	2	
...	...	...	\	W	...	...	...	...	
179	48 Active Power of output	0-65535	\	W	249	Read	=Register	2	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
180	1 Power Factor of output	0-1000	\	\	250	Read	=Register/1000	2	
...	...	...	\	\	...	...	...	...	
227	48 Power Factor of output	0-1000	\	\	297	Read	=Register/1000	2	

Ⅱ. Environmental Parameters：03H Function code to read，10H Function code to write

1	Temperature Value 1	0-140	\	℃	500	Read	=Register-40	2	0xFFFF means that it is not installed
2	Humidity Value 1	0-100	\	%	501	Read	=Register	2	0xFFFF means that it is not installed
3	Temperature Value 2	0-140	\	℃	502	Read	=Register-40	2	0xFFFF means that it is not installed
4	Humidity Value 2	0-100	\	%	503	Read	=Register	2	0xFFFF means that it is not installed
5	Temperature Value 3	0-140	\	℃	504	Read	=Register-40	2	0xFFFF means that it is not installed
6	Humidity Value 3	0-100	\	%	505	Read	=Register	2	0xFFFF means that it is not installed
7	Temperature Value 4	0-140	\	℃	506	Read	=Register-40	2	0xFFFF means that it is not installed

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
8	Humidity Value 4	0-100	\	%	507	Read	=Register	2	0xFFFF means that it is not installed
9	Temperature Value 5	0-140	\	℃	508	Read	=Register-40	2	0xFFFF means that it is not installed
10	Humidity Value 5	0-100	\	%	509	Read	=Register	2	0xFFFF means that it is not installed
11	Temperature Value 6	0-140	\	℃	510	Read	=Register-40	2	0xFFFF means that it is not installed
12	Humidity Value 6	0-100	\	%	511	Read	=Register	2	0xFFFF means that it is not installed
13	Temperature Value 7	0-140	\	℃	512	Read	=Register-40	2	0xFFFF means that it is not installed
14	Humidity Value 7	0-100	\	%	513	Read	=Register	2	0xFFFF means that it is not installed
15	Temperature Value 8	0-140	\	℃	514	Read	=Register-40	2	0xFFFF means that it is not installed
16	Humidity Value 8	0-100	\	%	515	Read	=Register	2	0xFFFF means that it is not installed

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
17	Wind Speed Value	0-255	\	m/s	516	Read	=Register/10	2	0xFFFF means that it is not installed

III. Configuration Parameters: 03H Function code to read，10H Function code to write

1	Communication Address	1-255	1	\	1000	Read and Write	=Register	2	
2	Buzzer Switch	0-1	1	\	1001	Read and Write	0: Close; 1: Start	2	Restart to restore defaults
3	Alarm Dry-Contact Switch	0-1	1	\	1002	Read and Write	0: Close; 1: Start	2	Restart to restore defaults
4	Current Upper Limit alarm set value (One-Phase)	0-700	160/320	A	1003	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit
5	Current Lower Limit alarm set value (One-Phase)	0-700	0	A	1004	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
6	L1 Current Upper Limit alarm set value (Three-Phase)	0-700	160/320	A	1005	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
7	L1 Current Lower Limit alarm set value (Three-Phase)	0-700	0	A	1006	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
8	L2 Current Upper Limit alarm set value (Three-Phase)	0-700	160/320	A	1007	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
9	L2 Current Lower Limit alarm set value (Three-Phase)	0-700	0	A	1008	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
10	L3 Current Upper Limit alarm set value (Three-Phase)	0-700	160/320	A	1009	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
11	L3 Current Lower Limit alarm set value (Three-Phase)	0-700	0	A	1010	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
12	Output 1 Current Upper Limit alarm set value	0-400	160	A	1011	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
13	Output 1 Current Lower Limit alarm set value	0-400	0	A	1012	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
...	...	...	...	...	...	Read and Write	...	...	...

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
106	Output 48 Current Upper Limit alarm set value	0-400	160	A	1105	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
107	Output 48 Current Lower Limit alarm set value	0-400	0	A	1106	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
108	Temperature 1 Current Upper Limit alarm set value	0-140	140	℃	1107	Read and Write	=Register-40	2	Upper Limit value is larger than that of Lower Limit.
109	Temperature 1 Current Down Limit alarm set value	0-140	0	℃	1108	Read and Write	=Register-40	2	Upper Limit value is larger than that of Lower Limit.
...	...	...	...	...	...	Read and Write	...	...	...
122	Temperature 8 Current Upper Limit alarm set value	0-140	140	℃	1121	Read and Write	=Register-40	2	Upper Limit value is larger than that of Lower Limit.
123	Temperature 8 Current Down Limit alarm set value	0-140	0	℃	1122	Read and Write	=Register-40	2	Upper Limit value is larger than that of Lower Limit.

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
124	Humidity 1 Current Upper Limit alarm set value	0-100	100	%	1123	Read and Write	=Register	2	Upper Limit value is larger than that of Lower Limit.限
125	Humidity 1 Current Lower Limit alarm set value	0-100	0	%	1124	Read and Write	=Register	2	Upper Limit value is larger than that of Lower Limit.
...	...	...	...	...	...	Read and Write	...	...	...
138	Humidity 8 Current Upper Limit alarm set value	0-100	100	%	1137	Read and Write	=Register	2	Upper Limit value is larger than that of Lower Limit.
139	Humidity 8 Current Lower Limit alarm set value	0-100	0	%	1138	Read and Write	=Register	2	Upper Limit value is larger than that of Lower Limit.
140	Wind Speed Current Upper Limit alarm set value	0-255	250	m/s	1139	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.
141	Wind Speed Current Lower Limit alarm set value	0-255	250	m/s	1140	Read and Write	=Register/10	2	Upper Limit value is larger than that of Lower Limit.

Ⅵ. Alarm: 01H Function code to read

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
1	General Alarm	\	\	\	2000	Read	0. No Alarm; 1: Alarm	1bit	
2	One–phase Over-current alarm (One –Phase)	\	\	\	2001	Read	0. No Alarm; 1: Alarm	1bit	
3	One–phase under-current alarm (One –Phase)	\	\	\	2002	Read	0. No Alarm; 1: Alarm	1bit	
4	Circuit Breaker Opened alarm	\	\	\	2003	Read	0. No Alarm; 1: Alarm	1bit	
5	L1 Over-current alarm (Three–Phase)	\	\	\	2004	Read	0. No Alarm; 1: Alarm	1bit	
6	L2 Over-current alarm (Three–Phase)	\	\	\	2005	Read	0. No Alarm; 1: Alarm	1bit	
7	L3 Over-current alarm (Three–Phase)	\	\	\	2006	Read	0. No Alarm; 1: Alarm	1bit	
8	L1 Under-current alarm (Three–Phase)	\	\	\	2007	Read	0. No Alarm; 1: Alarm	1bit	
9	L2 Under-current alarm (Three –Phase)	\	\	\	2008	Read	0. No Alarm ; 1: Alarm	1bit	
10	L3 Under-current alarm (Three –Phase)	\	\	\	2009	Read	0. No Alarm; 1: Alarm	1bit	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
11	Output 1 Over-current alarm	\	\	\	2010	Read	0. No Alarm; 1: Alarm	1bit	
12	Output 1 Under-current alarm	\	\	\	2011	Read	0. No Alarm; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
105	Output 48 Over-current alarm	\	\	\	2104	Read	0. No Alarm ; 1: Alarm	1bit	
106	Output 48 Under-current alarm	\	\	\	2105	Read	0. No Alarm ; 1: Alarm	1bit	
107	Output 1 with fault	\	\	\	2106	Read	0. No Alarm ; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
154	Output 48 with fault	\	\	\	2153	Read	0. No Alarm ; 1: Alarm	1bit	
155	Too high Temperature 1 alarm	\	\	\	2154	Read	0. No Alarm ; 1: Alarm	1bit	
156	Too low Temperature 1 alarm				2155				
...	...	\	\	\	...	...	...	...	
169	Too high Temperature 8 alarm	\	\	\	2168	Read	0. No Alarm ; 1: Alarm	1bit	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
170	Too low Temperature 8 alarm				2169				
171	Too high Humidity 1 alarm				2170				
172	Too Low Humidity 1 alarm	\	\	\	2171	Read	0. No Alarm ; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
185	Too high Humidity 8 alarm				2184				
186	Too low Humidity 8 alarm	\	\	\	2185	Read	0. No Alarm ; 1: Alarm	1bit	
187	Door Controller 1 alarm	\	\	\	2186	Read	0. No Alarm ; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
194	Door Controller 8 alarm	\	\	\	2193	Read	0. No Alarm ; 1: Alarm	1bit	
195	Infrared 1 alarm	\	\	\	2194	Read	0. No Alarm ; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
202	Infrared 8 alarm	\	\	\	2201	Read	0. No Alarm ; 1: Alarm	1bit	
203	Water Logging 1 alarm	\	\	\	2202	Read	0. No Alarm ; 1: Alarm	1bit	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
...	...	\	\	\	...	...	...	...	
210	Water Logging 8 alarm	\	\	\	2209	Read	0. No Alarm ; 1: Alarm	1bit	
211	Smoke 1 alarm	\	\	\	2210	Read	0. No Alarm ; 1: Alarm	1bit	
...	...	\	\	\	...	...	...	...	
218	Smoke 8 alarm	\	\	\	2217	Read	0. No Alarm ; 1: Alarm	1bit	
219	Too high Wind Speed Alarm				2218				
220	Too Low Wind Speed Alarm	\	\	\	2219	Read	0. No Alarm ; 1: Alarm	1bit	

Ⅴ. The number of control: 03H Function code to read，10H Function code to write

1	1st branch output on/off control	\	\	\	3000	Read and Write	0: Cannot be controlled; 1: on; 2: off	2	Writing 0 means invalid; when the parameter value is 0, there is no writing or registration action.
2	2nd branch output on/off control	\	\	\	3001	Read and Write	0: Cannot be controlled; 1: on; 2: off	2	
3	3rd branch output on/off control	\	\	\	3002	Read and Write	0: Cannot be controlled; 1: on; 2: off	2	

Serial No.	Items	Scope	Default	Unit	Modbus Address	Attribute	Real parameter value (Conversion formula)	Number of bytes	Remarks
...	...	\	\	\	...	Read and Write	...	...	
48	48th branch output on/off control	\	\	\	3047	Read and Write	0: Cannot be controlled; 1: on; 2: off	2	

Ⅵ. Restore Factory Defaults 10H Function code to write

1	Restore Factory Defaults	0x55AA	\	\	4000	Write	=Register	2	

Appendix Acronyms and abbreviations

Abbreviation/Acronym	Full Form
HTTPS	Hypertext Transfer Protocol Secure
NTP	network time protocol
PDU	power distribution unit
SNMP	Simple Network Management Protocol