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# 1. PRODUCT OVERVIEW

## 1.1 Safety

### Precautions for safe use

In order to use the equipment correctly and safely, please read the safety precautions carefully before using the equipment, and strictly follow the precautions.

- Handle with care during transit or installation.
- Ensure that the equipment is reliably grounded before use.
- The rated voltage used to connect AC distribution system must not exceed the allowable range of PDU product identifier.
- Maximum load must not exceed PDU rating.

### Maintenance requirements

- Changes to the network module and output modules must be operated by professional and technical personnel.
- Because the PDU output module base is charged, ensure proper insulation and protection during the maintenance of the equipment.
- Before disassembling the output module, please remove all outlet loads and prohibit replacing the output module with load.
- When installing the output modules, please pay careful attention to the direction of the module installation. Do not reverse installation, to avoid damage to the product.

## 1.2 Introduction

The ArcTiv iPDU series includes a modular outlet design allowing the user to customize the outlet sections while maintaining a common platform design. The outlets are offered in standard options and can be modified or replaced in the field. The 0U PDU's are also offered in low-profile configurations via high-density outlet designs and hydraulic magnetic circuit breakers.

### 1.3 Product Scope

The product line is offered in 3 standard ranges:

- Metered Input
- Metered Outlet
- Managed (Switched and Metered Outlet)

The standard features for each range include:

Feature	Metered Input	Metered Outlet	Managed
Monitoring of each phase (Energy, Power, PF, Voltage, Current)	•	•	•
Steel Chassis	•	•	•
Hot-swap Network Module	•	•	•
Hot-swap Outlet Module	•	•	•
Environmental Monitoring	•	•	•
Phase-Level Threshold Settings (Voltage, Current)	•	•	•
Outlet-Level Monitoring (Energy, Power, Current)		•	•
Outlet-Level Switching (Synchronous Delay)			•

## 2. FUNCTIONS & START-UP

### 2.1 Functional Overview

#### Monitoring function

Through the local LCD screen, the user can view the following:

- Current, voltage, energy consumption & power of each phase
- Baud rate, serial communication address, daisy chain address, device series, IP address
- Temperature & humidity status
- Current & power consumption of each individual outlet

#### Outlet switching function

Switching On/Off each individual outlet and circuit breaker, set up the power on/off delay, return to zero for power consumption at phase or outlet level.

#### Retain outlet status

Retain the former state of each outlet after restart.

#### User defined alarm

Triggered when thresholds of total current, individual outlet current or temperature & humidity are exceeded

#### System default alarm

When the total rating current, individual rating current are exceeded or temperature & humidity thresholds are exceeded.

#### Various alarm methods

Buzzer sounds, Alarm indicator flashes, value displayed in red from Web interface, flashing red LCD screen, alarm logs, E-mail notification and SNMP trap

#### User management

User permission configuration (User can be set as administrator or normal user).

#### Access methods

Web Interface, Telnet command line, Modbus, SNMP (v1, v2c, v3), Serial console

- LCD screen energy-saving mode and mute alarm buzzer
- Multi-user operation system & browser and remote software update.

## 2.2 Product Pictures and Functional Diagram



Managed PDU (0U)



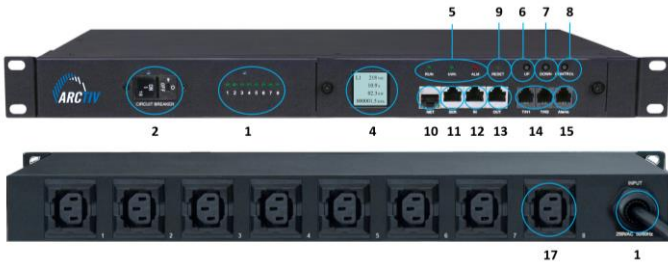
High-Density Managed PDU (0U)



Network Module



Outlet Module



Managed PDU (1U)

1. Input power cord
2. Hydraulic circuit breaker
3. Network module
4. LCD screen
5. Operation indicator (RUN, kWh, ALM)
6. **UP:** Scroll up to the previous page
7. **DOWN:** Scroll down to the next page
8. **CONTROL:** Confirm and flip button
9. **RESET:** Reset button
10. **NET:** 10/100M Ethernet port
11. **SER:** Serial port MODBUS Supported)
12. **IN:** Daisy Chain port Connect to the OUT port of previous PDU
13. **OUT:** Daisy Chain port; Connect to the IN port of next PDU
14. **T/H1** temperature and humidity sensor port 1. **T/H2:** temperature and humidity sensor port 2.
15. **Alarm:** Audible and visual alarm port
16. Outlet LED indicator
17. Outlet sockets
18. Outlet modules

### 3. HARDWARE INSTRUCTIONS

#### 3.1 Network Module

Item	Function	Instruction
RUN	RUN Indicator	Status: Flashing every second
kWh	kWh Indicator	Status: Flashing frequency depends on the connected load
ALM	Alarm Indicator	Status: Flashing when threshold is exceeded
NET	Ethernet Port	LAN / WAN communication port
SER	Serial Port	RS-485 Serial communication port
IN	Daisy-Chain Port	Connect to the OUT port of previous iPDU
OUT	Daisy-Chain Port	Connect to the IN port of the next iPDU
CONTROL	Control Button	Press to view the iPDU status & configuration. Restore to factory settings: Press and hold the control button, then press RESET button to restore to factory settings.
UP	Page Up	Scroll up to the previous page
DOWN	Page Down	Scroll down to the new page
RESET	RESET Button	Restart system
LCD Screen	View Status	Display the power data and alarm status
T/H	Temp / Humid Sensor Port	Connect to temperature & humidity sensors

#### 3.2 System Initialization

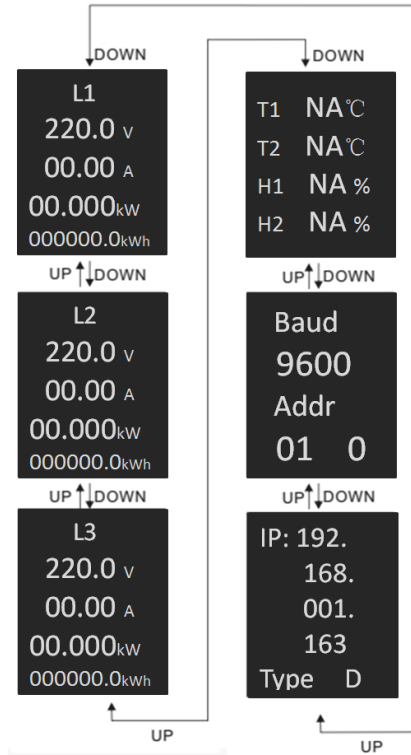
When powering on the PDU, the boot animation starts, then the buzzer sounds and the RUN indicator flashes. It starts in the normal working mode, after the unit has initialized and the LCD has started displaying the power data.

Press the UP/DOWN button to view the PDU information including the input voltage / current / power consumption of each phase, temperature/humidity status, baud rate, Modbus communication code, Daisy chain code, IP address and device series.



Press the CONTROL button to view the current/power/power consumption of individual outlet.

Press and hold the CONTROL button for 4 seconds to back to the input voltage / current / power consumption of each phase.



### 3.3 Hardware Settings

#### Restore to factory settings

Press and hold the CONTROL button to power on the PDU at the same time (Or press and hold the CONTROL button and press RESET button at the same time) until the RUN indicator is flashing.

#### Buzzer mute button

Press and hold the CONTROL button for 4 seconds, then press the UP button within 1 second to enable or disable the alarm buzzer.

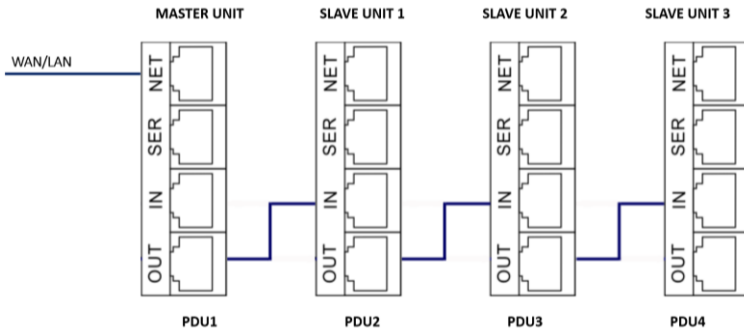
## Address code settings

Turn to the Baud rate and Address code page by press the UP or DOWN button, then press and hold the CONTROL button for 4 seconds. When an "S" is displayed in the upper right corner of the LCD screen, press the DOWN button to select the digit of the Modbus address and press UP button to set digit value from 0 to 9. Press CONTROL button to save the settings and PDU will restart.

## 3.4 Daisy Chain

### Ethernet Daisy Chain

Supports daisy chain up to 4 PDUs (1 master and 3 slaves) so the user can manage multiple PDUs from one IP address through the web interface. Daisy chain schematic is as follows:



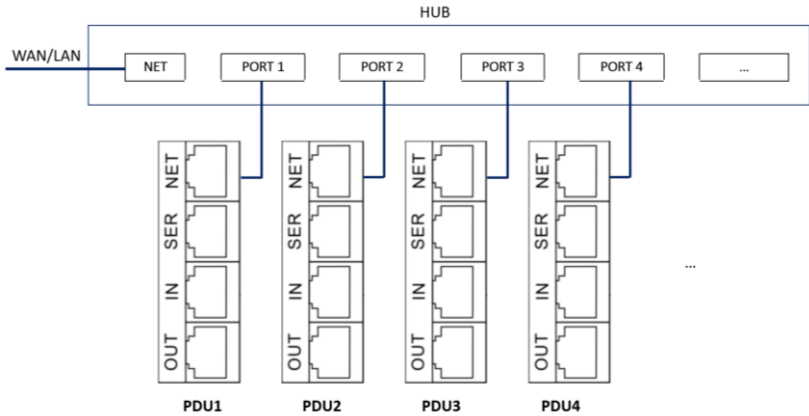
### Ethernet Daisy Chain settings

- 1) Log in each PDU, and configure the Work mode (Master unit or Slave unit) on Device Manage page.
- 2) Connect the NET port from the Master Unit to the WAN/LAN. Daisy chain the other PDU's by connecting the OUT port to the IN port of the next PDU. Connect all 3 Slave unit by the same method (see Figure above).
- 3) Access the Master unit through the Web interface and check the status of all the Slave units. If all are readable, daisy chain is successful WAN/LAN.

*Note: Only the same product series can support the Daisy chain connection. Single phase and Three phase series cannot Daisy chain together.*

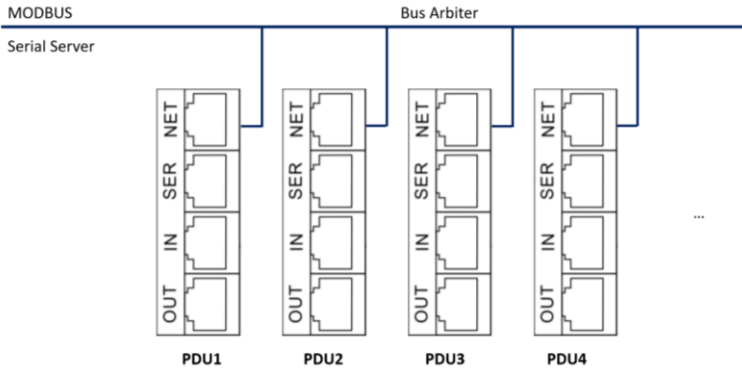
## Star Connection

Supports unlimited Star connection up to unlimited PDU through a HUB.



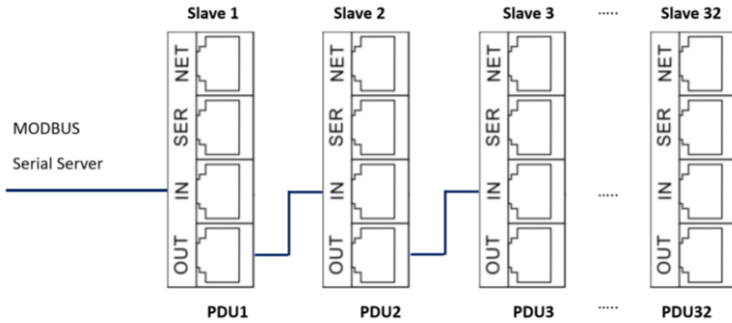
## Serial Connection settings

The Modbus-RTU protocol is used for the Star connection. The MODBUS Serial Server connects to the Bus arbiter, the RS485 port from the Bus arbiter connects to the SER port from each PDU. Serial connection can support up to 32 PDUs together. See figure below.



1. Log on to Web interface of each PDU to configure the serial communication code from the Modbus address code on Device Manage page
2. The Master unit collects the data from the SER port through the RS 485 serial communication cable.

The Modbus-RTU protocol is used here for the Star connection, The MODBUS Serial Server connect to the IN port from the first PDU. Daisy chain cable connect the first PDU OUT port to the IN port of the second PDU. Connect all 32 Slave unit by the same way (see Figure above) Serial connection can support up to 32 PDUs together. See figure as below.



- 1) Log on to Web interface of each PDU to configure the serial communication code from the Modbus address code on Device Manage page
- 2) The Slave1 unit collects the data from the IN port through the RS 485 serial communication cable.

## 4. SOFTWARE INTRODUCTION

### 4.1 Software Overview

The PDU is equipped with an embedded software system which provides network services including WEB server, SNMP, Telnet, SMTP/SMTSPS, MODBUS, NTP and etc. The User can access the PDU through the Web Interface or other methods, simultaneously.

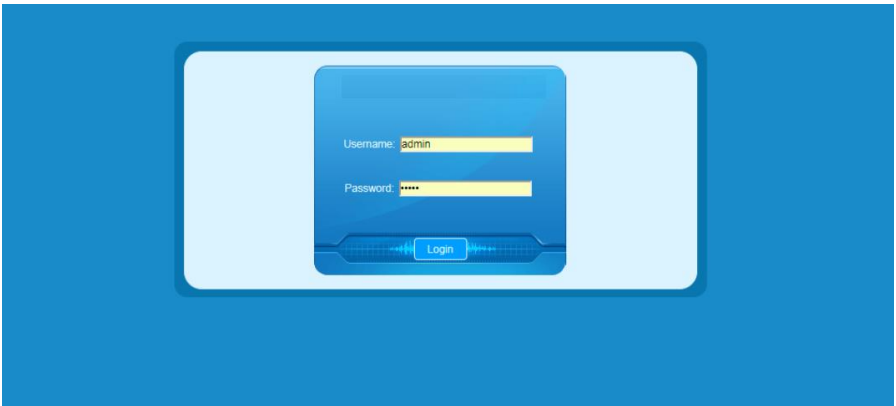
### 4.2 Access Methods

Access through the Web Interface through the following:

- Supports browsers (IE, Google chrome, Firefox, etc.)
- SNMP V1, V2c, V3
- Command line interface (telnet)
- Serial communication MODBUS RTU

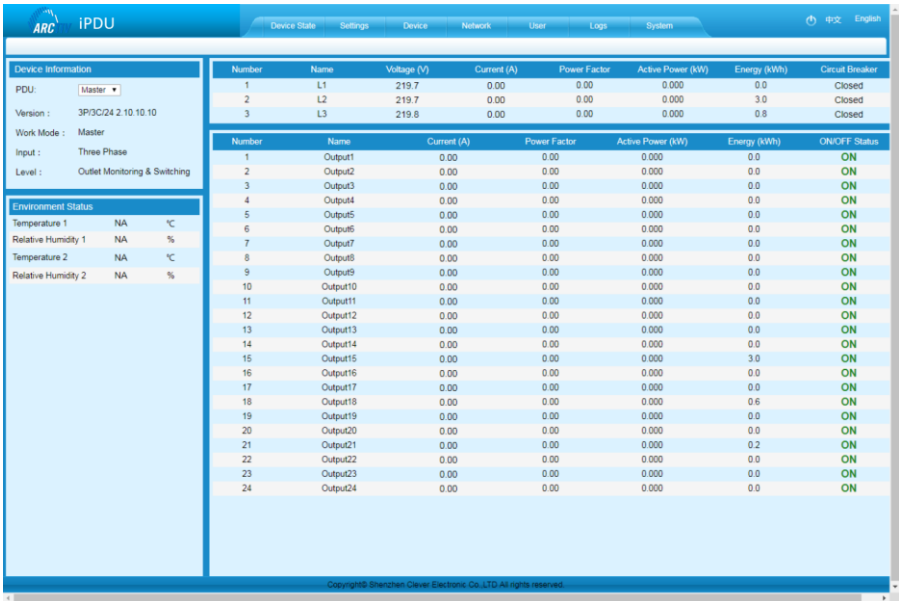
#### Web Interface

Open a browser and enter the default IP address (default IP address: 192.168.1.163), the login window will pop up (see below).



Fill in the correct user name and password (Factory default login name is admin, password is admin) to login the main interface. The main interface is designed with three major screen sections shown in the following screenshot.

# iPDU - Main Interface



- **Device information:** Selection of Master/Slave Unit, Software version, Daisy chain address code, device type and device series
- **Navigation tab:** Shows function tabs available
- **Detail window:** Shows PDU information under each function tab

## Device Status:

View the monitoring information as below:

- **Input monitoring:** The input current, voltage, power, energy & power factor of each phase and On/Off status of circuit breaker.
- **Outlet Monitoring:** The current, power consumption and ON/OFF status of each individual outlet.
- **Environment monitoring:** Temperature/humidity status of 2 sensors.

## Device Settings:

Click the Settings tab to configure thresholds of input voltage, input current, individual outlet current, temperature, humidity. Configure values for power On/Off delay of individual outlet, power consumption return to zero and outlet switching.

## Input Threshold Settings:

- The input voltage threshold range: 0 - 250VAC
- The input current threshold range: (1P: 0 - 63A), (3P: 0 - 32A)
- Temperature/Humidity threshold range: (0 - 40°C, temp), (0 - 99%, humid)

The screenshot displays the 'Settings' page for an ARC iPDU. The interface is divided into a left-hand navigation menu and a main content area. The navigation menu includes options like 'Total Threshold', 'Output Threshold', 'Energy Reset', 'Switch ON/OFF', 'Switch Group', and 'Port Permissions'. The main content area contains two tables for configuring input thresholds.

**Table 1: Current Thresholds**

Number	Name	Real Time Value	Min	Lower Limit	Upper Limit	Max	Save
1	L1 Current (A)	0.00	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="16"/>	<input type="text" value="16"/>	<input type="button" value="Save"/>
2	L2 Current (A)	0.00	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="16"/>	<input type="text" value="16"/>	<input type="button" value="Save"/>
3	L3 Current (A)	0.00	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="16"/>	<input type="text" value="16"/>	<input type="button" value="Save"/>

**Table 2: Voltage, Temperature, and Humidity Thresholds**

Number	Name	Real Time Value	Min	Max	Save
1	L1 Voltage (V)	219.7	<input type="text" value="80"/>	<input type="text" value="276"/>	<input type="button" value="Save"/>
2	L2 Voltage (V)	219.9	<input type="text" value="80"/>	<input type="text" value="276"/>	<input type="button" value="Save"/>
3	L3 Voltage (V)	219.7	<input type="text" value="80"/>	<input type="text" value="276"/>	<input type="button" value="Save"/>
4	Temperature 1 (°C)	NA	<input type="text" value="0"/>	<input type="text" value="40"/>	<input type="button" value="Save"/>
5	Temperature 2 (°C)	NA	<input type="text" value="0"/>	<input type="text" value="40"/>	<input type="button" value="Save"/>
6	Humidity 1 (%)	NA	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="button" value="Save"/>
7	Humidity 2 (%)	NA	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="button" value="Save"/>

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## Individual Outlet Threshold Settings:

- The individual outlet current threshold range: 0-16A
- User defined power On/Off delay for individual outlets: 0-10 seconds

*Note: The low load and overload threshold should be within the threshold range.*

The screenshot shows the 'Settings' page for 'Output Threshold' in the ARC iPDU web interface. The page has a blue header with the ARC logo and 'iPDU' text. Below the header, there are tabs for 'Device State', 'Settings', 'Device', 'Network', 'User', 'Logs', and 'System'. The 'Settings' tab is active. On the left, there is a sidebar with navigation options: 'Settings', 'Total Threshold', 'Output Threshold', 'Energy Reset', 'Switch ON/OFF', 'Switch Group', and 'Port Permissions'. The 'Master' dropdown is set to 'Master'. The main content area shows a table for 'Output Threshold' with 24 rows. The table has columns: 'Number', 'Name', 'Real Time Value (A)', 'Min(A)', 'Lower Limit (A)', 'Upper Limit (A)', 'Max (A)', 'Delay (S)', and 'Save'. The 'Unify Delay (S)' field is set to 1. The table data is as follows:

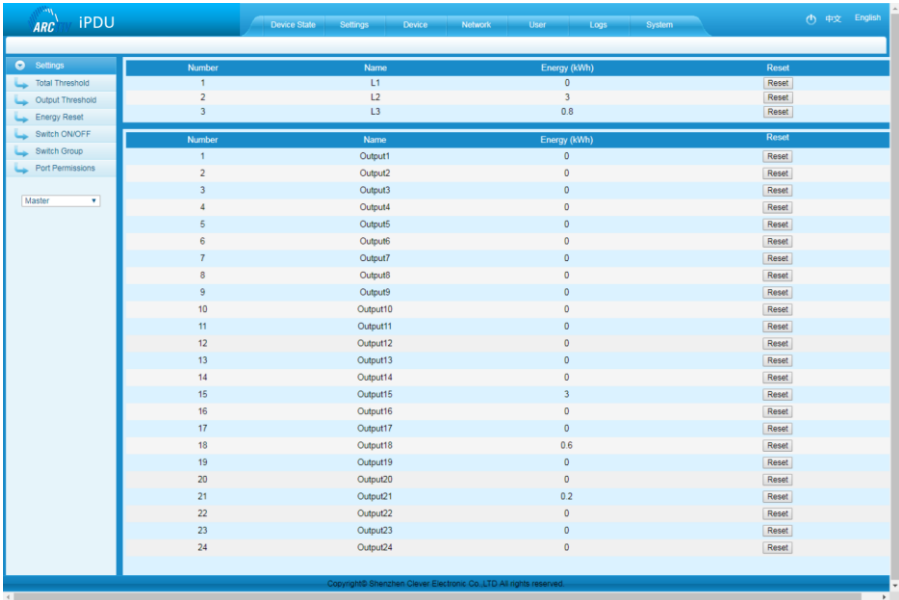
Number	Name	Real Time Value (A)	Min(A)	Lower Limit (A)	Upper Limit (A)	Max (A)	Delay (S)	Save
1	Output1	0.00	0	0	10	10	1	Save
2	Output2	0.00	0	0	10	10	1	Save
3	Output3	0.00	0	0	10	10	1	Save
4	Output4	0.00	0	0	10	10	1	Save
5	Output5	0.00	0	0	10	10	1	Save
6	Output6	0.00	0	0	10	10	1	Save
7	Output7	0.00	0	0	10	10	1	Save
8	Output8	0.00	0	0	10	10	1	Save
9	Output9	0.00	0	0	10	10	1	Save
10	Output10	0.00	0	0	10	10	1	Save
11	Output11	0.00	0	0	10	10	1	Save
12	Output12	0.00	0	0	10	10	1	Save
13	Output13	0.00	0	0	10	10	1	Save
14	Output14	0.00	0	0	10	10	1	Save
15	Output15	0.00	0	0	10	10	1	Save
16	Output16	0.00	0	0	10	10	1	Save
17	Output17	0.00	0	0	10	10	1	Save
18	Output18	0.00	0	0	10	10	1	Save
19	Output19	0.00	0	0	10	10	1	Save
20	Output20	0.00	0	0	10	10	1	Save
21	Output21	0.00	0	0	10	10	1	Save
22	Output22	0.00	0	0	10	10	1	Save
23	Output23	0.00	0	0	10	10	1	Save
24	Output24	0.00	0	0	10	10	1	Save

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## Power Consumption Return To Zero

User can view the power consumption of individual outlet or each phase. The specified power consumption can be returned to zero by clicking the Reset button. The power consumption value of specified outlet will be reduced from the total power consumption.



The screenshot shows the 'Energy Reset' configuration page in the ARC iPDU web interface. The page is divided into a left sidebar with navigation options and a main content area with two data tables. The top table shows phase-level energy consumption, and the bottom table shows individual outlet energy consumption. Each row in both tables has a 'Reset' button.

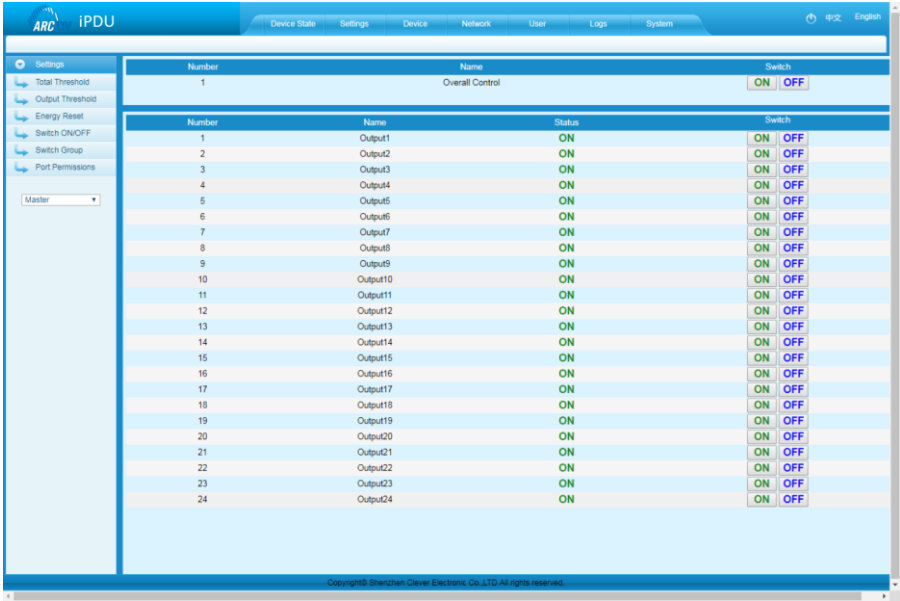
Number	Name	Energy (kWh)	Reset
1	L1	0	Reset
2	L2	3	Reset
3	L3	0.6	Reset

Number	Name	Energy (kWh)	Reset
1	Output1	0	Reset
2	Output2	0	Reset
3	Output3	0	Reset
4	Output4	0	Reset
5	Output5	0	Reset
6	Output6	0	Reset
7	Output7	0	Reset
8	Output8	0	Reset
9	Output9	0	Reset
10	Output10	0	Reset
11	Output11	0	Reset
12	Output12	0	Reset
13	Output13	0	Reset
14	Output14	0	Reset
15	Output15	3	Reset
16	Output16	0	Reset
17	Output17	0	Reset
18	Output18	0.6	Reset
19	Output19	0	Reset
20	Output20	0	Reset
21	Output21	0.2	Reset
22	Output22	0	Reset
23	Output23	0	Reset
24	Output24	0	Reset

# Outlet Control

- Click the ON/OFF button after the outlet to switch ON/OFF the specified individual outlets.
- Click the ON/OFF button after each phase to switch ON/OFF the outlets from the specified phase.
- Click All ON/All OFF button to switch ON/OFF all outlets at the same time.



## Switch Group

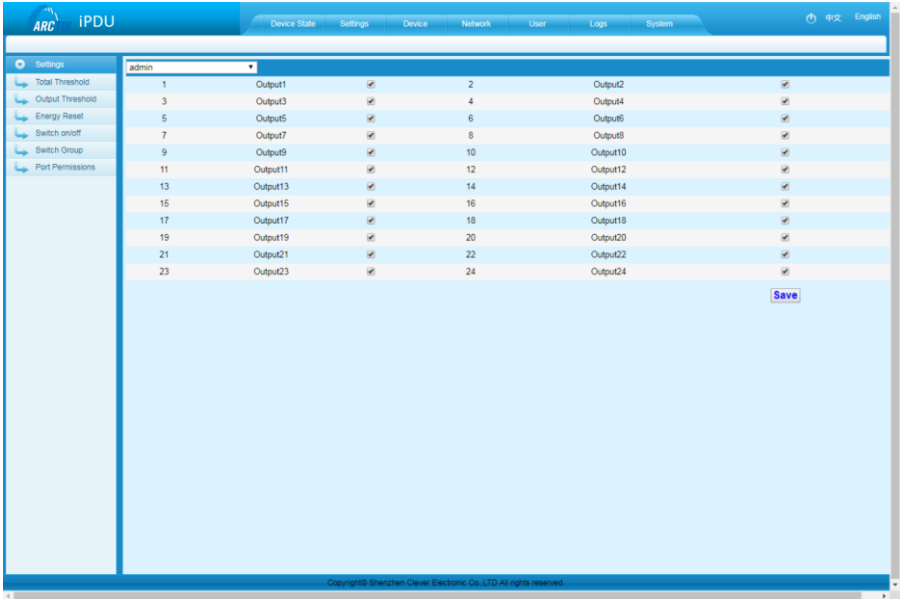
- Tick off the box from the Outlet Groups listed
- Select Enable from the dropdown list and click Save button
- By clicking the ON or OFF button, you can switch on/off the outlets this outlet group at one time

The screenshot displays the 'Switch Group' configuration page in the ARCTIV iPDU web interface. The page features a navigation menu on the left with options like 'Total Threshold', 'Output Threshold', 'Energy Reset', 'Switch on/off', 'Switch Group', and 'Port Permissions'. The main content area contains a table with 24 rows, each representing an outlet (Output1 to Output24). The columns are labeled 'No.', 'Outlet name', and eight 'Group' columns (Group1 to Group8). Checkmarks in the Group columns indicate which groups are selected for the current configuration. Below the table, there is a dropdown menu for 'Outlet grouping' set to 'Enable' and a 'Submit' button. At the bottom of the page, there is a row of 16 buttons, each labeled 'ON' and 'OFF', corresponding to the 24 outlets.

No.	Outlet name	Group1	Group2	Group3	Group4	Group5	Group6	Group7	Group8
1	Output1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Output2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Output3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Output4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Output5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Output6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Output7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Output8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Output9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Output10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Output11	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Output12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Output13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Output14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Output15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Output16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Output17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Output18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Output19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Output20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Output21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Output22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Output23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Output24	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

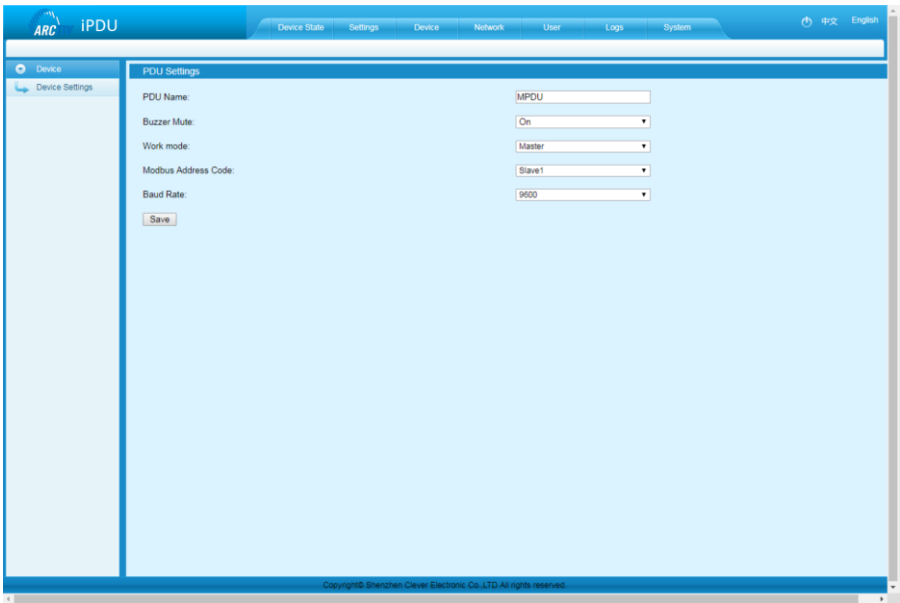
## Port Permissions Settings:

Modify the port permissions: In the user name drop down list, select the administrator or normal user account. Next to the corresponding output bit name, click the ✓ symbol to have the output bit control permission, and the unsigned symbol is no output bit control permission. Depending on the selected user, you can edit the output rights of multiple users and click the "Save" button.



# Device Management

Device Settings: To configure the device name, LCD screen energy saving mode, mute the buzzer alarm, Work mode, Modbus address code and baud rate.



## Network Settings:

### HTTP/SSL settings

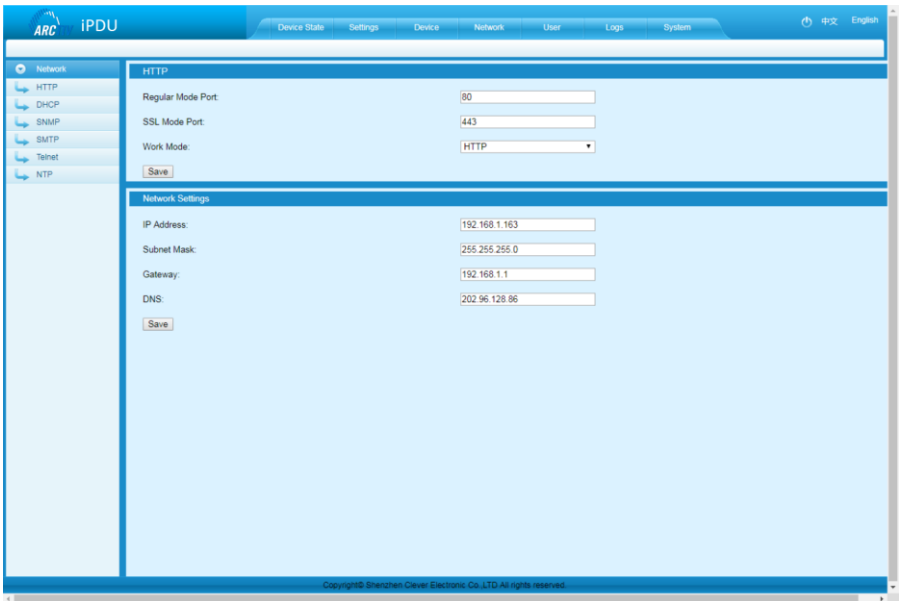
- Set-up and save the HTTP/SSL port according to the working mode.
- The default port is 80 under normal work mode.
- HTTPS(SSL) Mode Port is 443 by default

*Note: These settings will take effect when PDU is restarted*

### Network settings and modify IP address, for example:

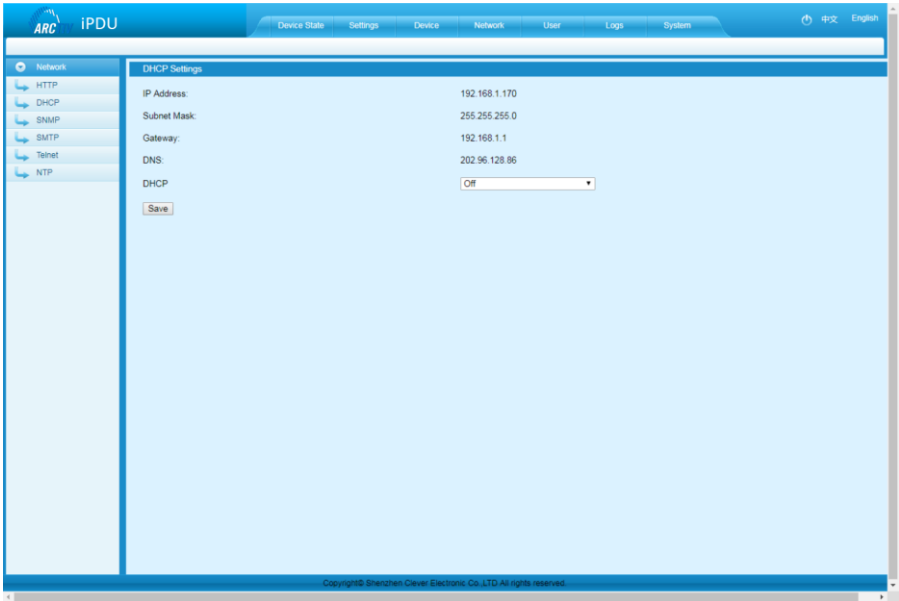
- IP address: 192.168.1.163 (factory default IP)
- Subnet mask: 255.255.255.0
- Gateway: 192.168.1.1
- DNS address: 202.96.128.86 by default

Please enter a correct DNS address in order to send the E-mail



## DHCP settings:

The default state of DHCP setting is Off. User can select On from the DHCP drop-down list and click Save to enable it. After restarting the software, the device will receive the IP automatically. IP can be viewed from the LCD screen.



*Note: When DHCP is On, the device automatically obtains the router to assign an IP address and will not allow you to manually modify the network settings.*

## SNMP Settings

- *SNMP V1/V2c settings:*

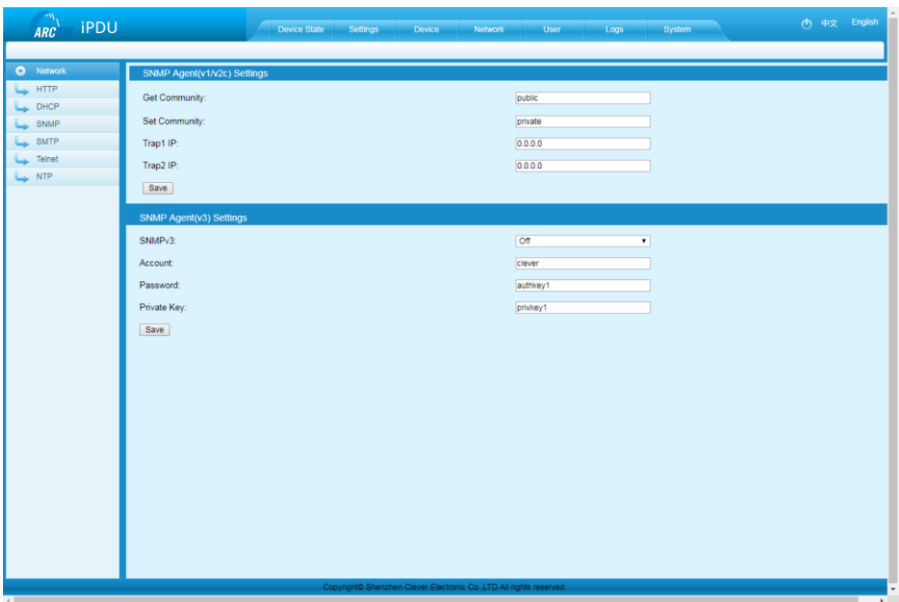
User can decide to Enable or Disable the SNMP access from the Web Interface. Enable SNMP V1 and V2 requires configuration of read community and write community. The default “Read community” and “Write community” is public and private respectively.

Trap address: can set 2 trap addresses. Fill in the trap address of SNMP management platform. Trap information will be sent directly to the addresses.

- *SNMP v3 Settings:*

Select “On” and fill in account, password, private key.

*Note: After saving the SNMP setting, the software must be restarted.*

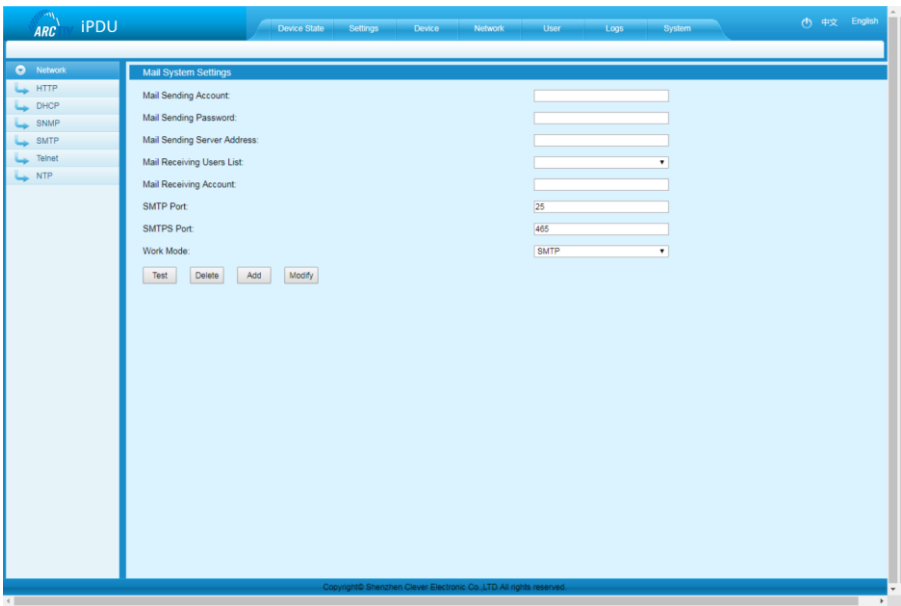




## SMTP Settings

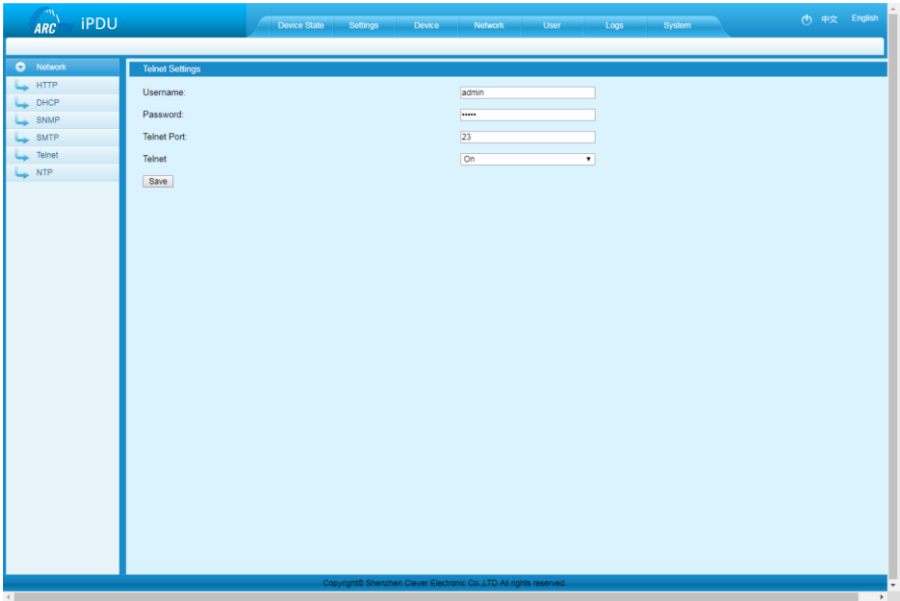
Click SMTP from the network navigation tab to enter the SMTP setting as shown above. Fill in the parameters of SMTP service including SMTP account, password, SMTP server, working mode (SMTP/SMTSPS) and e-mail recipients (up to 5 recipients), then Click Save. SMTP settings will take effect when PDU is restarted.

*SMTP test: Fill in the recipients address and click "Test" SMTP setting is successful if test email was received. If not received, please double check and configure the SMTP again.*



## Telnet Settings

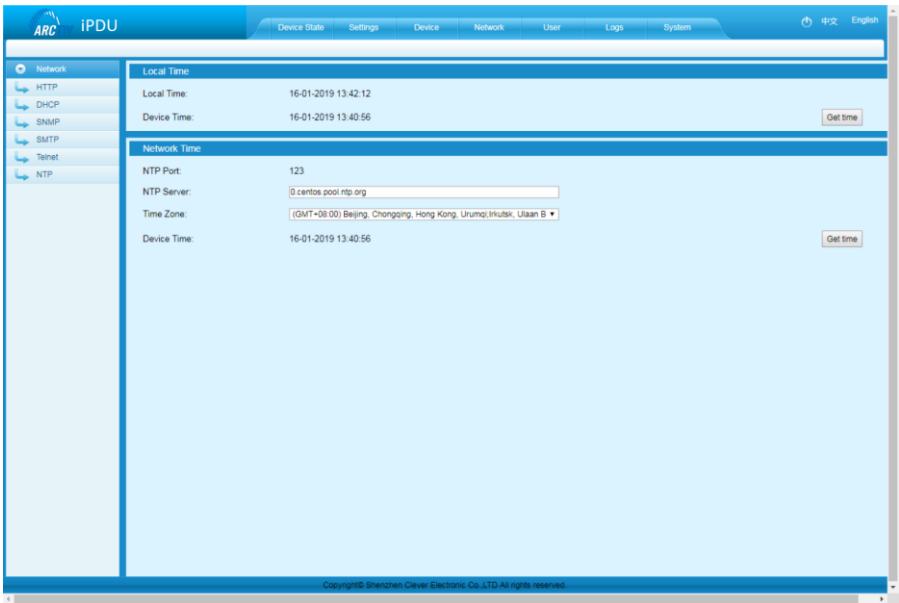
Telnet: Select "Enable" or "Disable" (Enable by default) and save, make sure to restart the software after modification. Telnet account and password is the same one used for login. Telnet port is 23.



*Note: telnet settings will take effect when iPDU is restarted.*

## NTP Settings:

NTP section displays the device current time which is also the time recorded for the logs.



- *Local time calibration*  
Click Time Acquisition to synchronize the iPDU system time to the local machine.
- *Network time calibration*  
Click Time Acquisition to synchronize the iPDU system time and date to the specified time zone according to the NTP server.

*Note: Make sure the iPDU is connected to the internet when synchronizing the system time*

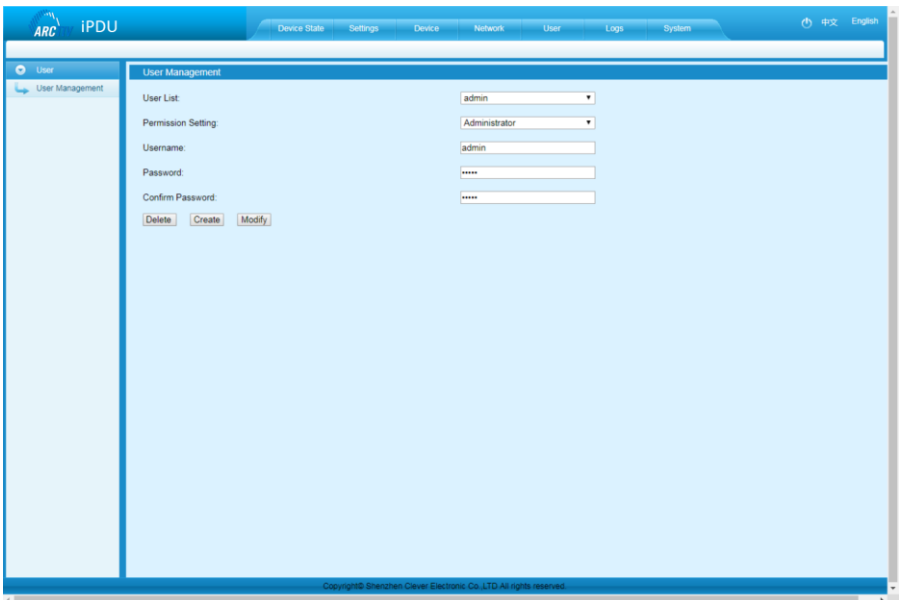
## User Settings

- Create new account: Click User Settings tab and fill in the user name, password, confirm password, then click Add to create new user account.
- Edit user account: Click User settings, fill in the new user name, password and confirm-password in the right side of the existing User name and Password, then click Save.
- Delete User account: Select the user account from the user list and click Delete.

*Note: The maximum length for user name and passwords is 10 characters, the user name and password exceeds the maximum of 10 characters will be a failure action. The default Administrator cannot be deleted.*

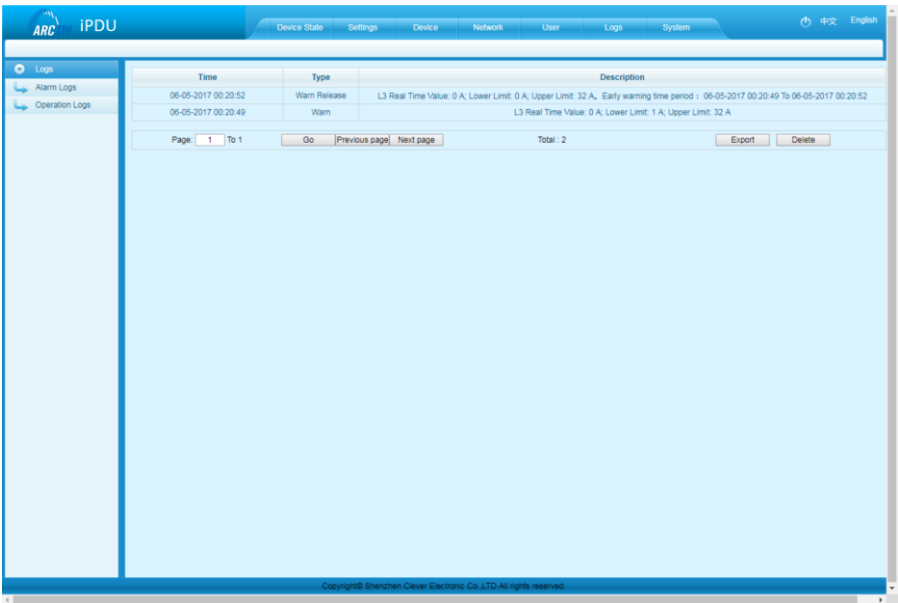
- Permission settings: Click permission setting and select the Administrator or normal user from the drop-down list, then click Save button.

*Note: Normal users don't have permission to do the configuration (Save/configure/delete button will not be available), only the administrator has the full permission to do so.*



## Logs

- Log type: Alarm log and operation log
- Log information: time, log type and detailed information
- Memory capacity: Max 300 logs. The initial logs will be removed when reached 300 logs.
- To view the logs, click a page number to open a specific page of the log
- Every page display 30 logs and maximum support to 10 pages; the initial pages will be deleted when over 10 pages
- To delete the log, click Delete on the web page, at the prompt, check OK to delete all the logs.
- To export the log: The logs from the current page can be exported via log.xls format through IE/Google/Firefox browser.



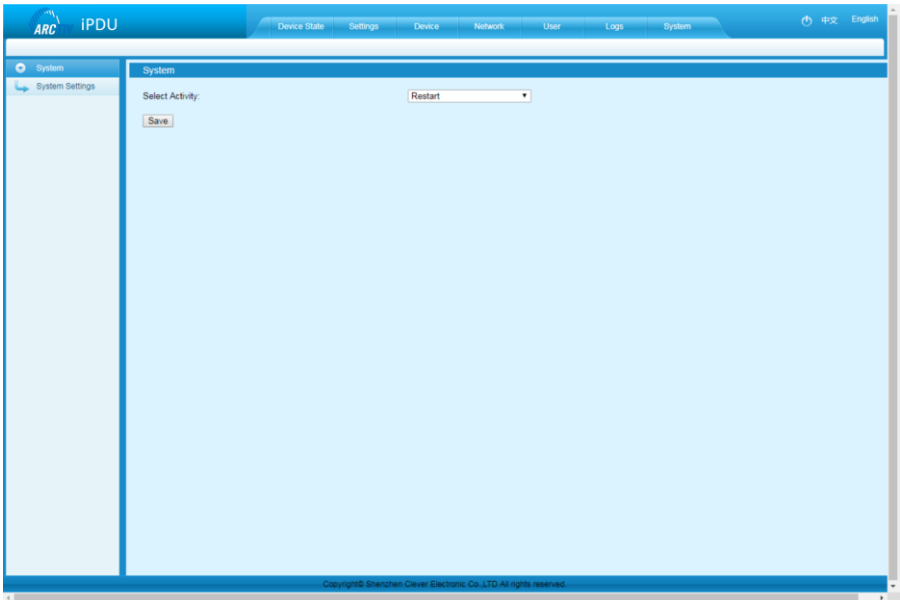
*Note: At the prompt of "Sever object cannot be built", please try again after configuring the security level of IE browser following the below steps:*

## Internet Explorer:

- Tools → Internet Options → Security → Custom Level
- Tick off Enable (unsafe) from Initialize and script ActiveX controls not marked as safe for scripting → OK → OK

### *System command settings:*

To Restart or Restore to factory settings from the system command drop down list.



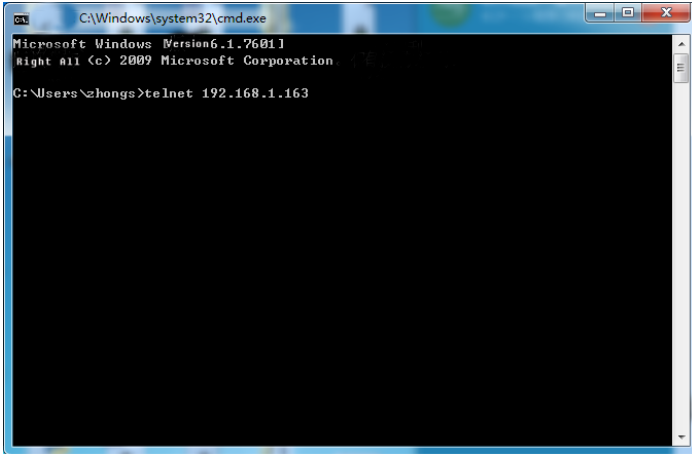
## SNMP access

This software supports SNMP V1, V2C and V3, a MIB file can be provided at customer's request. User can view the power information and environment status and receive the alarming from the device. After enabling the SNMP function from Web Interface, A SNMP management software is required to be installed. Please refer to protocol instruction for the OID information of the SNMP.

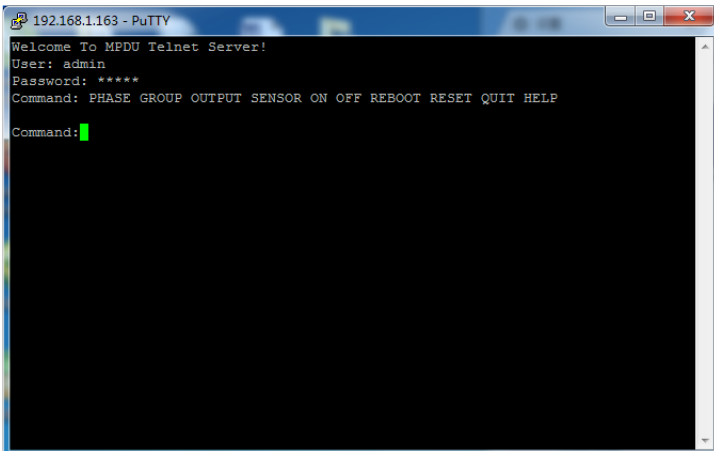
## Telnet Command Line Interface

User can use the Telnet command line interface to view, configure and manage the Rack PDU remotely and easily. Telnet does not support the Daisy chain connection, user can only access and manage the Master unit.

- To open the Telnet client by Start → Run command → enter “Telnet” in the input box and click OK.
- Enter the IP address as illustrated in the figure below.



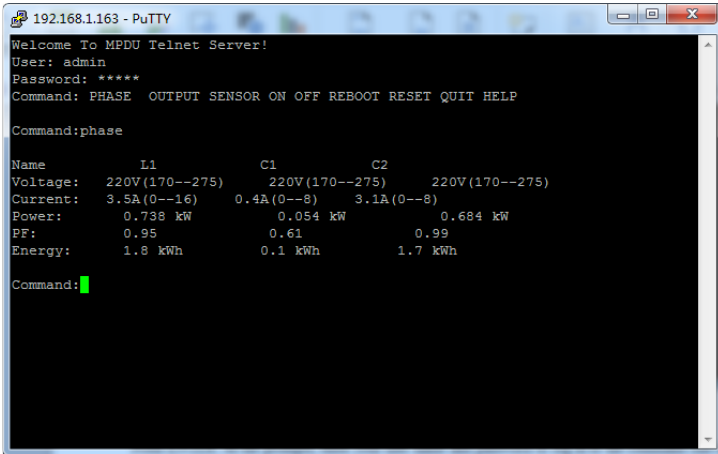
Press ENTER. At the prompt, enter your user name and password to log in to the command line interface as shown in the figure below.



## “PHASE” Command

Use the PHASE command to view the power data including current, voltage, power, power factor, and power consumption on each phase.

Command line format: PHASE as shown below.



```
192.168.1.163 - PuTTY
Welcome To MPDU Telnet Server!
User: admin
Password: *****
Command: PHASE  OUTPUT SENSOR ON OFF REBOOT RESET QUIT HELP

Command:phase

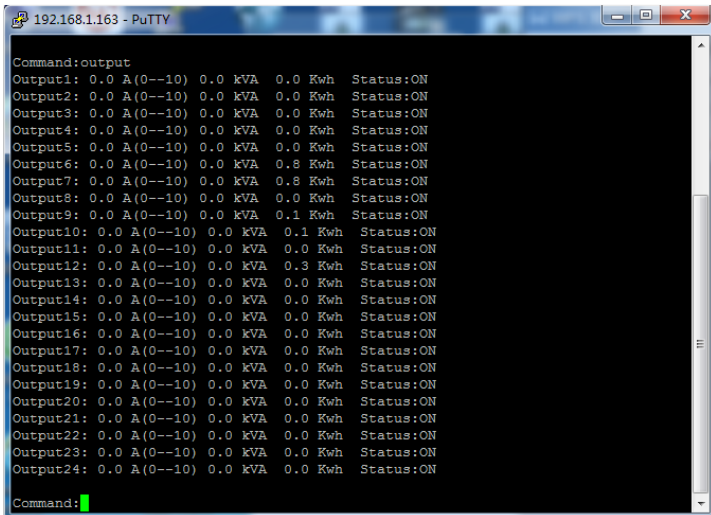
Name      L1          C1          C2
Voltage:  220V (170--275)  220V (170--275)  220V (170--275)
Current:  3.5A (0--16)    0.4A (0--8)     3.1A (0--8)
Power:    0.738 kW         0.054 kW        0.684 kW
PF:       0.95         0.61            0.99
Energy:   1.8 kWh         0.1 kWh         1.7 kWh

Command: █
```

## “OUTPUT” Command

Use the OUTPUT command to view the current, power, power consumption and ON/OFF status at individual outlet level.

Command line format: OUTPUT; see figure below.



```
192.168.1.163 - PuTTY

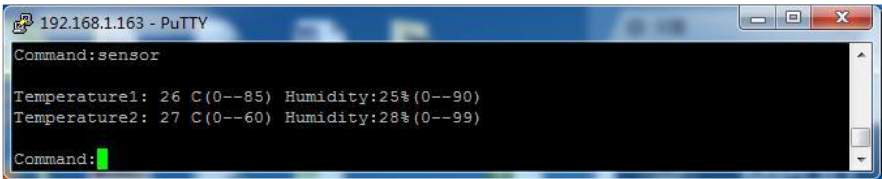
Command:output
Output1: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output2: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output3: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output4: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output5: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output6: 0.0 A(0--10) 0.0 kVA 0.8 Kwh Status:ON
Output7: 0.0 A(0--10) 0.0 kVA 0.8 Kwh Status:ON
Output8: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output9: 0.0 A(0--10) 0.0 kVA 0.1 Kwh Status:ON
Output10: 0.0 A(0--10) 0.0 kVA 0.1 Kwh Status:ON
Output11: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output12: 0.0 A(0--10) 0.0 kVA 0.3 Kwh Status:ON
Output13: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output14: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output15: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output16: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output17: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output18: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output19: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output20: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output21: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output22: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output23: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON
Output24: 0.0 A(0--10) 0.0 kVA 0.0 Kwh Status:ON

Command: █
```



## “SENSOR” Command

Use the Sensor command to view the temperature/humidity status and its threshold Command line format: SENSOR; see figure below.



```
192.168.1.163 - PuTTY
Command:sensor
Temperature1: 26 C(0--85) Humidity:25%(0--90)
Temperature2: 27 C(0--60) Humidity:28%(0--99)
Command:
```

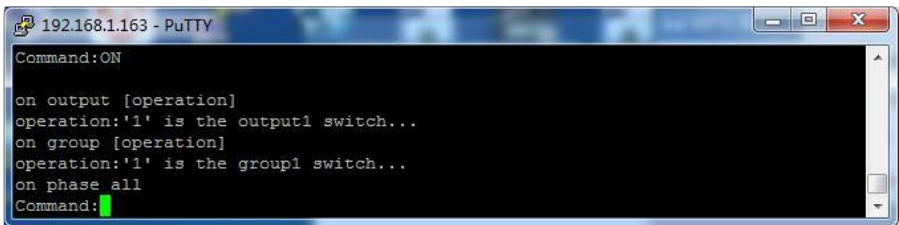
## “ON/OFF” Command

Use the ON/OFF command to switch On/Off the individual outlet, outlets from each phase or all outlets. Command line format: ON/OFF

【index】 【operation】 see figure below.

【index】 Individual outlets, Group, Phase.

【operation】 Serial number 1 means the outlet 1 from phase 1; details below:



```
192.168.1.163 - PuTTY
Command:ON
on output [operation]
operation:'1' is the output1 switch...
on group [operation]
operation:'1' is the group1 switch...
on phase all
Command:
```

OUTPUT

```

192.168.1.163 - PuTTY
Command:ON
on output [operation]
operation:'1' is the output1 switch...
on group [operation]
operation:'1' is the group1 switch...
on phase all
Command:ON OUTPUT 1
Command successfully!
    
```

Enter command line: ON OUTPUT 1 to switch on the outlet 1  
 Enter command line: OFF OUTPUT 1 to switch Off the outlet 1  
 OUTPUT command can switch ON/OFF one outlet at one time.

---

GROUP

```

192.168.1.163 - PuTTY
Command:on
on output [operation]
operation:'1' is the output1 switch...
on group [operation]
operation:'1' is the group1 switch...
on phase all
Command:on output 1
Command successfully!
Command:on group 1
Command successfully!
Command:
    
```

Enter command line: on group 1 to switch on outlet from branch circuit 1  
 Enter command line: off group 1 to switch off outlet from branch circuit 1

---

PHASE

```

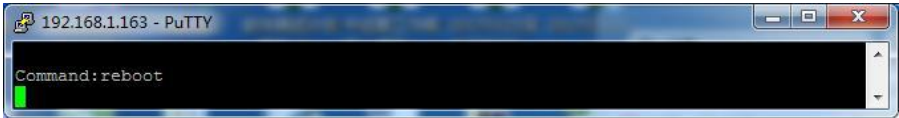
192.168.1.163 - PuTTY
Command:on phase all
Command successfully!
Command:
    
```

Enter command line: on phase 1 to switch on outlets from phase 1  
 Enter command line: off phase 1 to switch off outlets from phase 1

---

## REBOOT Command


Use the REBOOT command to restart the device as shown below.



A screenshot of a PuTTY terminal window titled "192.168.1.163 - PuTTY". The terminal shows the command "reboot" entered at the "Command:" prompt. A green cursor is visible at the end of the command line.

## RESET Command

Use the RESET command to restore to factory settings as shown below.



A screenshot of a PuTTY terminal window titled "192.168.1.163 - PuTTY". The terminal shows the command "reset" entered at the "Command:" prompt. Below it, another "Command:" prompt is visible with a green cursor.

## QUIT Command

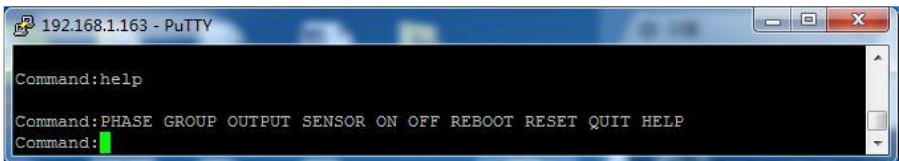
Use the QUIT command to logout the Telnet command line as shown below.



A screenshot of a PuTTY terminal window titled "192.168.1.163 - PuTTY". The terminal shows the command "quit" entered at the "Command:" prompt. Below it, another "Command:" prompt is visible with a green cursor.

## HELP Command

Use the HELP command to shows general help, as shown below.



A screenshot of a PuTTY terminal window titled "192.168.1.163 - PuTTY". The terminal shows the command "help" entered at the "Command:" prompt. The output is "Command: PHASE GROUP OUTPUT SENSOR ON OFF REBOOT RESET QUIT HELP". Below the output, another "Command:" prompt is visible with a green cursor.

## MODBUS-RTU access

Use two-wire RS-485 serial communication port for serial access.

Modus-RTU protocol configuration including Modbus-RTU communication address (1-99), baud rate (4800, 9200, 19200, 38400, 115200), data bit (8), parity (no), stop bit (1)

*Note: The serial communication data is collected from the SER port of PDU.*

## 5. TECHNICAL SPECIFICATIONS

Items		Specifications	
Voltage	Input Voltage	1P: 100VAC – 240VAC (50/60 Hz) 3P: 200VAC – 400VAC (50/60 Hz)	
	Input Plug	Standard IEC Plug or connector	
	Power Cord	32A:	3x6mm <sup>2</sup>
		63A:	3x16mm <sup>2</sup>
		3*16A:	5x2.6mm <sup>2</sup>
		3*32A:	5x6.0mm <sup>2</sup>
	Cable Length	3M	
Max Load Current	1P: 16A, 32A, 63A, 3P: 3x16A, 3x32A		
Overload Protection	16A / 32A hydraulic breaker		
Output	Sockets	IEC320 C13 (locking), C19	
	Socket Quantity	8 / 24 / 36 / 42 Outlets	
	Output Voltage	1P: 100VAC – 240VAC (50/60 Hz)	
	Max Output Current	16A, 32A	
	Max Phase Current	16A, 32A	
Control Ports	NET Port	1xRJ45 Ports	
	Daisy Chain Port	2xRJ45 Ports	
	SER Port	1xRJ45 Ports	
	Temp & Humid Port	2xRJ11 Ports	
	Audible and Visual Alarm Port	1xRJ11 Ports	
Display	Working State	1xLED	
	Power Pulse	1xLED	
	Alarm	1xLED	
	IP Address, PDU State, Value, Alarm	2.8" LCD Screen	
Load Current Display	Total Current	16A / 32A, (1% accuracy) Resolution: 0.01A, Response: 500ms	
	Individual Load Current	10A / 16A, (1% accuracy) Resolution: 0.01A, Response: 500ms	
Sensors	Temperature	0°C ~ +45°C (+/- 1°C) Response: 400ms	
	Humidity	10 ~ 90%, (5% accuracy) Response: 400ms	

Items		Specifications
Size	Dimensions (LxWxD)	0U: 1829x56x52mm, 1U: 482x216x44.4mm
	Mounting	0U: Tool-less (button), 1U: EIA Rails
Case	Color	Black
Accessories (included)	Installation Bracket	1 Set
	Network Cable	2M, Blue
	Serial Cable	2M, White
	User Manual	1 set, CD
(Optional) Environment	Sensor	Temperature / Humidity Sensor
	Operating	0°C ~ +45°C, Relative Humidity: 5% ~ 95%
	Storage	-20°C ~ +70°C, Relative Humidity: 5% ~ 95%
	RoHS	Compliance

## 6. Warranty & Service

The product is guaranteed for two years from the date of purchase; extended warranties are available for purchase. We will repair or replace the defective products covered by this warranty. If product has already exceeded the warranty period or the problem are caused because of illegal operation, a corresponding fee will be charged.

The below cases are not covered by the warranty:

- Problems caused because of improper maintenance
- Problems caused because of unauthorized change, modification or improper use
- The devices are not used in the rated physical environment
- Problems in consequence of any Force Majeure incidents

Repair notice:

- Make sure to use a protective hard carton when arrange the shipment to repair. Damage occurred during the shipment is not covered by the warranty.
- Make a short note about the problem and the operation process.
- Owner is responsible to pay for the shipping cost as well as the customs duty.
- Please list your name, address and phone number so that we can contact you at any time.