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Preface

Version Description

Manual version: V1.0

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Brief Introduction

This User Manual describes the installation and operation of IP_PDU equipment. Before you use our device for the first time, please read all the included materials carefully, and install and operate this series of products in keeping with items listed in the manual, so as to avoid damaging the device resulting from malpractice. Thank you for choosing our products.

Environmental Protection

This product complies with the design requirements associated with environmental protection. The storage, use and disposal of the product should be conducted in accordance with related national laws and regulations.

We welcome you to put forward advice and suggestion to our work, which shall be viewed as the ultimate support to us.

Chapter 1 Introduction

1.1 Overview

IP-PDU provides power distribution and management solutions. Power distribution system is fitted with multiple outputs designed to distribute electric power and voltage. Power management system is a power switching control unit (It also include remote control), which is a combination of precision ammeter and Ethernet communication, to provide users real-time device monitoring mechanism, and provide centralized monitoring software, managers also can monitor a large number of digital socket.

1.2 Features

◆ Provides 8 ways of output interface; Input voltage is 110V AC or 220V AC; Maximum output current is up to 10A for each outlet. Maximum output Total current is up to 16A;

◆ Provides smog, water logging, entrance guard, temperature and humidity and other environmental acquisition interface(optional);

◆ Perfect LED monitoring panel functions: The panels can display devices operating status, total load current, operating voltage, individual load current and on/off status of each unit;

◆ Rich control functions: Outlet on/off control, order on/off delay time interval set of outlet, on/off time setting of outlet. It is capable to keep the original status of each unit and configuration after a system reboot;

◆ System Alarm Functions: Alarming when total or individual load current exceeds the rating, or unit malfunctions, over temperature or humidity, smog, water logging or entrance guard is opened;

◆ A variety of alarm mode: Panel status LED indicator flashing; buzzer beep alarming; automatically send E-mail to the system administrator; SNMP Traps alarming;

◆ A variety of Access and management configurations: Support Telnet, Web Server, centralized management software, SNMP MIB integrated network management system;

◆ Support devices cascade function: It provides 2-way switchable 10/100M Ethernet to implement multi-platform IPPDU cascade management;

◆ System support RTC time keeping, and granted time from NTP at the same time, support network system upgrades;

◆ System software provides Log recording: To record and save the local alarming data, and to provide log review and output.

Chapter 2 Functional Specifications

2.1 PDU Front Panel

2.1.1 Front Panel sketch maps
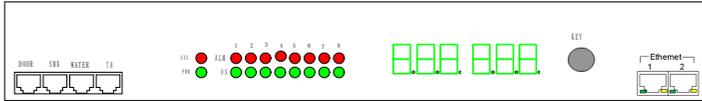
Figure 2-1 Front Panel sketch map

2.1.2 Front Panel LED Indication

There are 18 indicators on the front panel of the device, and their functions are:

LED name	Color	Functions	Status	Description
SYS	Red	System alarm	On	System abnormal
			Off	System normally
PWR	Green	Power Indication	On	Power supply normal
			Off	Power off
ON1—ON8	Green	Output Status	On	Output on
			Off	Output off
ALM1--ALM8	Red	Output Alarm	Flashing	Output warning, Relay damaged or Current overload
			Off	Output without warning

2.1.3 Front Panel interface

Ethernet

Two adaptable 10/100M Ethernet interfaces, one for device management, and the other for device cascade.

TH interface

RS232 serial communication with RJ45 physical interface connects temperature and humidity transmitter for monitoring the environment temperature and humidity.

WATER interface

Connect RJ45 port of water sensor for monitoring the water leaking.

SMK interface

Connect RJ45 port of smog sensor for monitoring smog in the environment, mainly used to prevent the fire.

DOOR interface

Connect RJ45 and Security port of door magnetic alarm.

LED display instruction：

The left three digital pipe display name and the right three digital pipe display data, for instance，AC indicates voltage; CH1—CH8 indicates each output and the corresponding value is the current value of output; ALL indicates the total current value; IP1 indicates the first digit of IP address; IP2 indicates the second digit of IP address; IP1 indicates the third digit of IP address; IP1 indicates the fourth digit of IP address.

Key－help：

KEY is used to cyclically switch the LED digital display. Each press will make it to display the next parameters. If with the long press, the display will automatically switch to next parameters every second.

2.2 PDU Back Panel

2.2.1 Back panel sketch maps
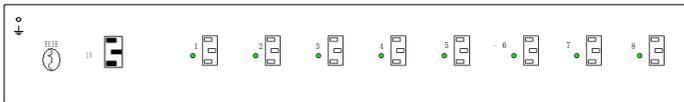
Figure 2-2 Back Panel sketch map

2.2.2 Back panel indicator light

Eight indicator lights on the back panel: when output interface with voltage, the indicator light is on , otherwise，the indicator light is off.

2.2.3 Back panel interface

Back panel provides eight power output interfaces, one power input interface and one overload protection switch.

Chapter 3 WEB configuration instructions

Connect the device and computer with network cable, open the IE browser and login the network management interface（ Default IP address ：192.168.0.168, User name and password: admin ）

1) Display function of current/voltage/switch/sensor real-time state

After login the network management interface, as shown in the following picture:

"CURRENT(Amps)": Real-time current.

"ENERGY(KWH)": Energy Consumption (form power on to now).

"STATUS": Switch-status, ON: turn on, OFF: turn off.

"Total Current": Total eight Current.

"In Voltage"：Input voltage.

"Door": The state of door magnetic alarm.

"Water Logging": The state of water sensor.

"Smog Alarm": The state of smog sensor.

"Temperature": Environment temperature, if the device doesn't connect to temperature and humidity sensor，it's 0.

"Humidity": Environment humidity ， if the device doesn't connect to temperature and humidity sensor，it's 0.

"CONTROL": NONE is no operation ， ON represents open the corresponding output, OFF represents close the corresponding output. Press the "Apply" button to complete the setting after selection.

"Global Control": Unified control of eight outputs, NONE is no operation,

ON represents open all the outputs and OFF represents close all the output. After press the "Apply" button, device will open or closed all the output in turn according to the time of delay parameter setting.

2) System information display function

After login the system, click the icon beside the "Sys Information", then click "Sys Information" to enter the system information interface, as shown in the following picture:

"Verify": Indicate whether the sampling current and voltage value is verified, YES: verified, NO: not verified.

"Software Version": Software version number.

"Hardware Version": Hardware version number.

"Last Time Update ": Software version update time.

"Ethernet (MAC)": Network physical address.

"Device Number": Device number, it can be modified.

"Device Name": Device name, it can be modified.

"Device Location": Device Location, it can be modified.

"Contact Person": Related contact person, it can be modified.

"Remark Informs": Remark Information, it can be modified.

Every item that can be modified has at most 15 characters to be set and press "apply" button to confirm after modification.

3) Limit configuration function

After login the system, click the icon beside the "Configuration", then click "Threshold Config"   to enter the limit configuration interface, as

shown in the following picture. You can modify the minimum and maximum current value, the minimum and maximum voltage value, and minimum and maximum value of temperature and humidity. The maximum current value is up to 10A and the minimum current value is 0A, the maximum voltage value is up to 249VAC and the minimum voltage value is 0VAC. Press "apply" button to confirm after modification. If the actual real-time value is beyond the range of the limit configuration and system alarm is on, the system will send alarm signals.

4) Timing switch configuration function

After login the system, click the icon beside the "Configuration", then click "Timing Control" to enter the Timing open/close configuration interface, as shown in the following picture. You can modify the switching time. In the "ACTIVE" options, OFF indicates timing off is effective, ON indicates timing on is effective, ON/OFF Repeat indicates repeating the timing switch every day, NONE represents no operation. All the configuration formats are same. Press "apply" button to confirm after modification. The actual timing switch value equals timing switch value adds time delay switch. "Device Time" displays the system time, if the system time does not agree with the local time，you can modify it in the time setting page.
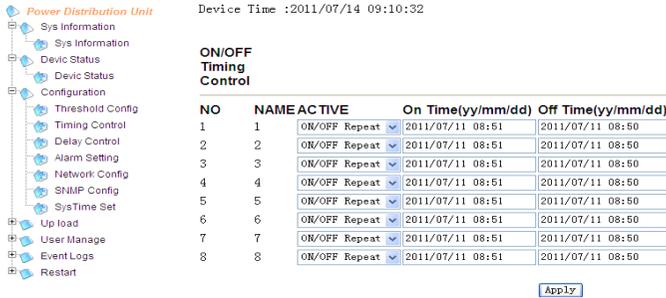
5）Delay switch Configuration function

After login the system, click the icon beside the "Configuration", then click "Delay Control" to enter the delay switch Configuration interface, as shown in the following picture, you can modify the delay switch time. The maximum delay of each group switch operation is up to 3500s. If the value is to be set greater than 3500, the configuration is invalid and it will recover the last correct settings. Press "apply" button to confirm after modification.
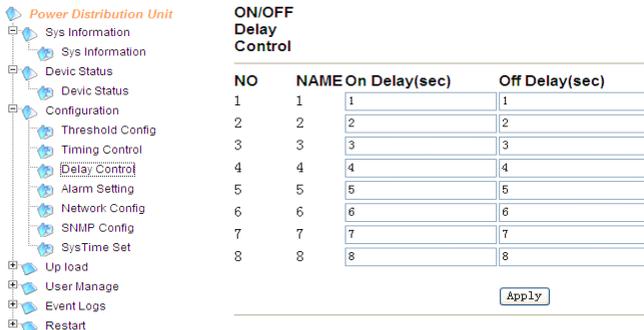
6）Alarm configuration function

After login the system, click the icon beside the "Configuration", then click "Alarm Setting" to enter the Alarm configuration interface, as shown in the following picture. You can set the alarm related parameters, drive the alarm E-mail and buzzer alarm, and set the alarm E-mail parameters. Press "Save" button to confirm after modification and press "Test" button to test whether the configurations are correct.

7）Network configuration function

　　After login the system, click the icon beside the "Configuration", then click "Network Setting" to enter the network configuration interface, as shown in the following picture. You can set the network related parameters, and drive the DHCP, IP address, gateway, subnet mask and DNS. Press "Apply" button to confirm after modification.

8）SNMP configuration function

　　After login the system, click the icon beside the "Configuration", then click "SNMP Config" to enter the SNMP configuration interface, as shown in the following picture. You can set the SNMP related parameters. The device supports SNMP v1/v2/v3, in "SNMP" options, if you choose SNMPV2, the device use V2 format to report TRAP, otherwise use V3 format. SNMP v2, SNMP v3 and TRAP related configuration items are displayed on this configuration interface. In "Trap Dest1/2 SecurityLevel" option of "SNMP TRAP Configure" ID1/ID2/ID3, ID x(x=1, 2, 3) indicates

the device use related parameters of ID number x(x=1, 2, 3) in "SNMPV3 Configure" when encrypted. Press "Apply" button to be active immediately after modification.

9) System time setting function

After login the system, click the icon beside the "Configuration", then click "SysTime Set" to enter the system time setting configuration interface, as shown in the following picture. There two ways to set system time, one is network timing setting and the other is manual setting. When select GMT as your time zone, the system time is UTC. "Time Updates" do not use network setting or set it every 10m.

10) System upgrade and upload/download of parameter file function

After login the system, click the icon beside the "Up load", then click "Up load" to enter the configuration interface. Fined the bin file with "浏览" button and press "upload" to finish upgrading automatically, system will reboot after that. You can upload all configuration record of system parameters with "upcfg" button and load down device parameters with

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"getdown". As shown in the following picture.

11) User management function

After login the system, click the icon beside the "User manage", then click "User manage" to enter the user management interface. The main function of this interface is to change user name and password. Press "Apply" button to be active immediately. Use the new user name and password to login the system. As shown in the following picture.

12) Log recording function

After login the system, click the icon beside the "Event Logs", then click "Event Logs" to enter the log recording configuration interface. Each page shows 15 event record, start display from the first record with "First" button, scroll forward with the "Prevsions" button and scroll back with the "next" button. Export log File with "SaveAs" button and choose .TXT format to save the log file. As shown in the following picture.

13) System restart function

After login the system, click the icon beside the "Restart", then click "Restart" to enter the system restart configuration interface, the system will restart automatically after pressing "apply" button. You also can set the system to restart immediately. The restart will reset the default parameters, as shown in the following picture.

Restart System

Click restart to reboot this device.

Restart Now
Restart Now
default parameter

apply

Chapter 4 Technical Specification

4.1 Operating Environment

The device has a wide range of operating temperature and is able to work normally and stably in highly adverse environment.

Working Temperature　　　　　0℃ ～ +50℃

Storage Temperature　　　　　－40℃ ～ +70℃

Relative Humidity　　　　10 %～95 %

Atmospheric Pressure　　　　70～106 kpa

The environment should be free from corrosive and solvent gases, dust, and magnetic interference.

4.2 Power Supply

Input voltage　　　　　AC 220V / AC 110V

Max input current　　　　16A

Maximum output current　　10A

Power consumption　　　＜7 W

4.3 Mechanical Specifications

Dimension：　430mm×43.5mm×203mm

4.4 Ethernet Interface Specification

Ethernet Interface Speed rate: 10M/100M adaptive, 10M half duplex, 10M full duplex, 100M half duplex and 100M full duplex optional.

Ethernet interface is compatible with IEEE 802.3 protocol

4.5 TH interface

Electrical characteristics: In line with the CCITT V.28 protocol

Transmission rate: 9600bps

Interface type: RJ45

Chapter 5 Method of installation

5.1 Safety Requirement

Please read the following safety items before installation to avoid physical injury and damage to this product or any other products connected. To avoid potential hazard, the product can be used only within specified scope. **Maintenance can be conducted only by technical personnel authorized by our company.**

1. Avoid fire or physical injury.

2. All power supply should be shut off during installation, which can be turned on only when all terminals have been connected correctly and checked to be free from mistakes.

3. Connect and disconnect in a properly. When device is powered up, do not connect or disconnect data cable without due cause.

4. Grounding. The product should be linked to the ground through earthed conductor. To avoid electric shock, the earthed conductor must be in connection with the ground. Make sure that the product is correctly earthed before connecting with the input or output terminals.

5. Correct connection. Users are expected to use accompanied accessories. In the event that special connections are needed, please pay attention to the corner allocation requirements.

6. Don't operate when there is no cover plate over the device. Do not operate the product if the cover plate or panel has been dismounted.

7. No contact with bare circuit is allowed. Do not touch bare connectors or components when power is on.

8. No operation is allowed if there is suspicion of failure. Call authorized maintenance personnel for examination and reparation should the product be suspected of damage.

9. Good ventilation. Do not operate under humid or explosive environment.

10. Maintain the surface of the product clean and dry.

5.2 Inspection upon Unpacking

After unpacking the product, inspect the type, quantity and condition of device and accessories inside according to the list of contents specified in this manual. Contact the Company or its distributors and agencies immediately should abnormal circumstances arise.

5.3 Power Supply

Check the power supply of the device. The power input should be configured in accordance with related requirements. Pay particular attention to the voltage and polarity if the power supply is DC.**Please disconnect the power supply before you plug in/out power cable. And operate the device under the environment which is suggested by the user manual.**

5.4 Test

Set to join the right power supply, the device willself-test, PWR light is on continuously, and all the LEDdigital tube displaysthe number 8. After self-testing, LED displays real-time voltage.

5.5 Set up and Connection

According to the requirements of network environment is connected, open the power, equipment enter the normal working condition.

If the device is not working properly, please see the fault diagnosis and exclusion, if still not rule out the possibility of failure, please contact with the company or the company dealers, agents contact.

Chapter 6 Appendix

6.1 How to make temperature and humidity interface connection

The temperature and humidity interface is RJ45.

No.	1	2	3	4	5	6	7	8
TH	12VDC	RXD	TXD		GND			

6.2 How to make water logging, smog, entrance guard alarm interface connection

The interface is RJ45.

No.	1	2	3	4	5	6	7	8
	12VDC	SIG		GND	GND	GND	GND	GND

6.3 Making of Ethernet Interface Connecting Cable

Ethernet interface Connecting Cable adopts twisted pair line with its specific making methods divided into two international standards, which are EIA/TIA568A and EIA/TIA568B. Position the tail of crystal head downward (i.e. the flat side upward), determine the lines with figures as 1 2 3 4 5 6 7 8 from left to right, and the distributions of each line are as follows:

Pin 1   Pin 8
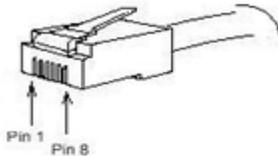
The following tables show two international standards: EIA/TIA568B Standard

No.	1	2	3	4	5	6	7	8
Definition	TXD+	TXD-	RXD+			RXD-		
Color	White/	Ora	White/	Bl	White/	Gr	White/	Bro

	Orange	nge	Green	ue	Blue	een	Brown	wn

EIA/TIA568A Standard

No.	1	2	3	4	5	6	7	8
Defin ition	TXD+	TX D-	RXD+			RX D-		
Color	White/ Green	Gr een	White/ Orange	Bl ue	White/ Blue	Ora nge	White/ Brown	Bro wn

Making of straight-through line:

　　Both heads are connected as per T568B line sequence standard.

Making method of crossover line:

　　One head is connected as per T568A line sequence while the other head is connected as per T568B line sequence.

6.4 Failure Diagnoses and Troubleshooting

Phenomena	Potential Cause	Measures
Equipment power indicator PWR light is not bright	1. External power supply is not plugged in 2. Conductor dropped into machine frame that leads the power supply to be short circuited with the ground. 3. Malfunctions of power supply module	1. Plug the external power supply 2. Remove the conductor 3. Contact the supplier
Before receiving the output load condition, display output current or voltage	1. Sampling resistor may weld. 2. Reference voltage is not correct.	Contact the supplier
Ethernet ACT indicator light is not bright	1. Not in accordance with the standard Ethernet cable	Remaster the Ethernet cable according to standard

6.5 Warranty Card

Our company is committed to provide users with the following terms:

1. Warranty service

    1)   Within the charge free warranty term (within 12 months since the purchase of the product), damaged parts can be exchanged free of charge and maintenance charges will be free in the conditions that the device is considered to be malfunctioned in normal service by our company.

    2)   Within the charged warranty term (more than 12 months and within 36 months since the purchase of the product), damaged parts will be charged for corresponding cost with free maintenance service in the conditions that the device is considered to be malfunctioned in normal service by our company.

2. Users can not enjoy warranty service with the following cases and corresponding cost of damaged parts replacing and maintenance service will be charged

    （1）   Exceed 36 months since the purchase of the product

    （2）   Can't provide certificate of purchasing date, and serial No. of product shows that ex-works term has exceeded 36 months;

    （3）   Include but not limit to the abnormal service conditions such as violent knocking, extrusion, drop, liquid immersion that cause damages;

    （4）   Fragile label on the device is damaged;

    （5）   User disassembles this product himself

    （6）   Force majeure that leads to product damage, such as earthquake, flooding and lightening stroke;

3. The newly installed parts after maintenance will be repaired free of charge within 12 months since the installation date.

4. When malfunction occurs, users can choose to send it to our company to receive maintenance service or to post it to maintenance points of our company all over the country to be repaired.

5. Our company does not undertake any responsibilities for losses caused by abnormal operation; for losses really caused by product itself, including but not limited to all direct or indirect losses due to data loss, our company will only undertake responsibilities within the selling price of products.

Repair and Maintenance Record

Product Name: IP_PDU		Device No.:	
Maintenance date		No. of Service Bill	
1			
2			
3			
4			
5			

修改记录：（此页不打印）

版本号	修改人	修改日期	修改内容
V1.0.0	Liucf	120619	将"IP PDU USER manual v1"整理成完整的英文说明书。
V1.1.0	Yingpj	120620	整理，告警配置功能 WEB 截图里姓名和邮件地址删除