

Monitored PDU

User Manual

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1. Introduction

The PDU is an Internet ready device designed and is equipped with an intelligent current-meter (True RMS) that will indicate the total power consumption of a power strip.

The PDU offers an easy set up and user-friendly communication software. This software provides the function that assistant manager to remotely monitor the multiple PDU power consumption to realize the total current power consumption and utilization for the enterprises.

Features:

- Built-in web server, manager can real time to monitoring the current consumption of the power strip.
- Build-in true RMS current meter.
- Setup easily, meter can read the IP address directly.
- SSL secure access to web.
- Provide audible alarm when the power consumption over the threshold of warning and overload.
- Send the email and traps when the power consumption exceed the trigger value of warning or overload to the PDU.
- Provide utility, it can monitor a large mount of PDU at the same time.
- Support the SNMP and provide MIB for the PDU to be monitored by NMS.
- Provide power protection by the circuit breaker.
- Option accessory can support temperature and humidity detection.

2. PDU Package

The standard PDU package contains a Power Distribution Unit with supporting hardware and software. The components of the package are:

- Power Distribution Unit.
- Rack mount Brackets.
- CD-ROM, it contains:
 - User Manual.
 - PDU Software.
 - MIB: Management Information Base for Network.
 - Adobe Acrobat Reader.

3. Function

Interface

One circuit

MTV-1511A-01N1
 MTH-1511A-08N1
 WMH-1511A-08N1
 MTH-2011B-08N1
 MTH-1023J-08N1
 MTH-1623K-01N1
 MTH-1623K-08N1
 WMH-1623K-08N1



Multiple circuits, included ENV

MTV-3011M-16N2
 MTV-3020P-16N2
 MTV-3223C-01C1
 MTV-3223C-16N2
 PTV-1640C-24N3
 PTV-3240C-24N6



Functions	Description
Ethernet	RJ45 port for network communication port.
Audible Alarm	Warning- 1 beep in 1 second. Overload- 3 beeps in 1 second. Note: The audible alarm will keep beeping until the current gets back to normal and the current is lower than the threshold to 0.5 amps.
Function Button	<ul style="list-style-type: none"> ● Press and release to turn off the warning beeping. The overload beeping can not be cancelled. ● Press and hold the key after 1 beeping; it can let the meter to show up the current information, temperature and humidity in sequence. (available for PDU in multi-circuits) ● Press and hold the key after 2 beeping; it can let the meter to show up the IP address ● Press and hold the key after 4 beeping; it can change the way to get IP by DHCP or fixed IP. ● Press and hold the key after 6 beeping; it can reset PDU back to default setting.
Meter	3 digits to display current and IP Address.

ID	The identification of power bank or PDU.
LED Indicator	SSL (yellow): Light on means web access is protected by SSL. DHCP (Green): Light on means PDU gets IP address by DHCP. Status (Red): Indicate each circuit status. (by model)
ENV	RJ11 for ENV probe attached.
Circuit Breaker	Overload power protection.

4. Installation

This section will provide a quick instruction to install the PDU.

CAUTION: This unit is intended for indoor use only. Do not install near water or expose this unit to moisture. To prevent heat buildup, do not coil the power cord when in use. Do not use extension cords. Do not attempt to make any internal changes to the power source. Do not attempt to modify any portion or component.

CAUTION: Do not use power generator as input power source of PDU.

CAUTION: High-voltage surges and spikes can damage this equipment. To protect from such power surges and spikes, this unit must have a good earth ground or good power surge protection.

CAUTION: Do not exceed the AC current rating for the selected model.

CAUTION: In order to be absolutely removed from the power supply, the power cord must be unplugged from the power source.

Rack Mount Instructions

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer.

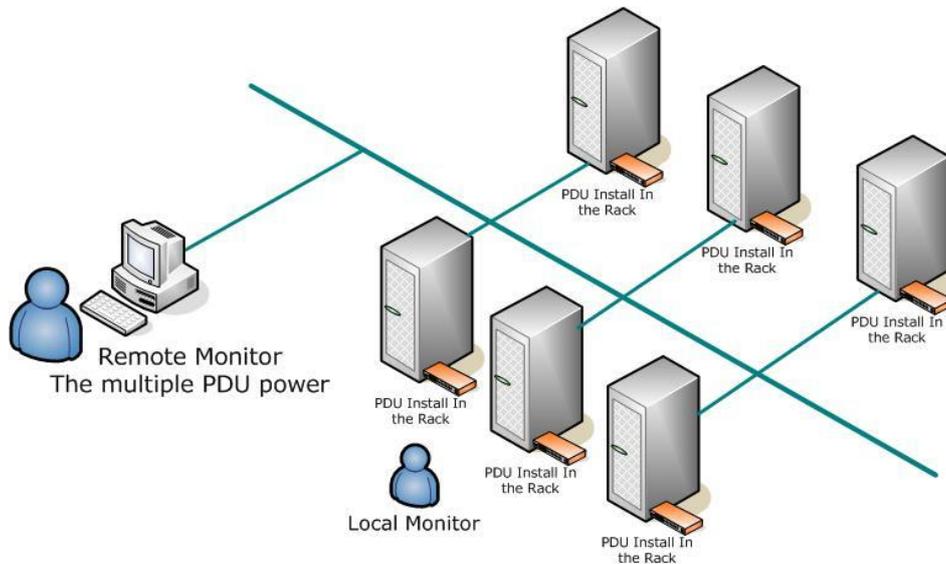
B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

Diagram



Hardware

1. Install mounting brackets.
2. The PDU comes with brackets for mounting in a rack. To mount the PDU into a rack performs the following procedure:
3. Attach the mounting brackets to the unit, using the four retaining screws provided for each of the brackets.
4. Choose a location for the brackets.
5. Align the mounting holes of brackets with the notched hole on the vertical rail and attach with the retaining screws.
6. Connect input and output power.
7. Connect Ethernet cable to the PDU.
8. Switch on the PDU.

Note 1:

The default setting for the way to get IP address is DHCP. If PDU can not get the IP from DHCP server, the IP address will stay at 192.168.0.216

Note 2:

TO SETUP THE NETWORK SYSTEM FOR PDU, STRONGLY RECOMMEND TO BUILD UP THE POWER MONITORING NETWORK SYSTEM ISOLATED WITH THE OTHERS, IN ORDER TO KEEP THE STABILITY OF GETTING POWER INFORMATION AND SYSTEM OPERATION.

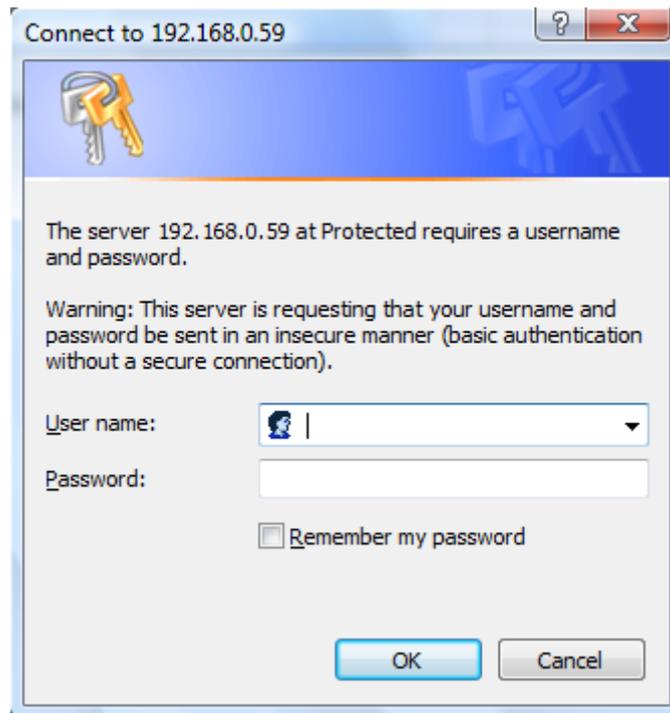
5. Web Interface

Login:

Input the PDU IP address in web browser.

Default ID is snmp.

Password is 1234.



Information: PDU

Display total PDU and each outlet power consumption.

When plug the option device - ENV probe, it will display temperature and humidity information.

 PDU		
Total load: 0.4 A , Status: Normal		
Information	PDU	
PDU	PDU	0.4 A Normal
System		
Configuration	Option Device	
Threshold	Temperature	N/A
User	Humidity	N/A
Network		
Mail		
SNMP		
SSL		

Information: System

Indicate PDU system information.

 PDU		
Total load: 0.4 A , Status: Normal		
Information	Model No.	MTV-3223C-01N1
PDU	Firmware Version	s4.82-090901-1cb
System	MAC Address	00:16:18:77:05:B3
Configuration	System Name	<input type="text" value="PDU"/>
Threshold	System Contact	<input type="text" value="Admin"/>
User	Location	<input type="text" value="Office"/>
Network		<input type="button" value="Apply"/>
Mail		
SNMP		
SSL		

Information: Power (available for PDU with kWh measurement functions)

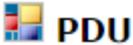
When PDU supports kWh measurement functions, web interface display "Power" page to indicate all power information, including:

Voltage, Frequency, Power Factor, Active Power, Apparent Power and Main Energy.

Accumulated Energy: Subtotal for energy. User can reset to 0 and restart calculating.

Carbon Emission Data: Reference data.

CO2 Electricity Emission Rate: Users can check this parameter through their power plant.

	
Total load: 0.0 A , Status: Normal	
Information PDU System Power	Voltage 111.36 V Frequency 59.98 Hz Power Factor 1 Active Power 0 W Apparent Power 0 VA Main Energy 15.318 kWh
Configuration Threshold User Network Mail SNMP SSL	<hr/> Accumulating Energy 7.714 kWh Carbon Emission Data 4.906 Kg <input type="button" value="Reset"/> <hr/> Co2 Electricity Emission Rate <input type="text" value="0.636"/> <input type="button" value="Reset"/>

Configuration: Threshold

Set the warning and overload threshold for each circuit.

Set lower and upper threshold for temperature and humidity.

PDU			
Total load: 0.4 A , Status: Normal			
Information PDU System	Name	Threshold (Amp)	
			Warning
Configuration Threshold User Network Mail SNMP SSL	PDU	<input type="text" value="25"/>	<input type="text" value="32"/>
		Lower	Upper
	Temperature	<input type="text" value="1"/>	<input type="text" value="99"/>
	Humidity	<input type="text" value="1"/>	<input type="text" value="99"/>
<input type="button" value="Apply"/>			

Configuration: User

Change ID and password.

Default ID is snmp and password is 1234.

Note:

Maximum character number of ID and password is 12.

ID and password cannot use special characters.

 PDU	
Total load: 0.4 A , Status: Normal	
Information	Original
PDU	ID <input type="text"/>
System	Password <input type="text"/>
Configuration	New
Threshold	ID <input type="text"/>
User	Password <input type="text"/>
Network	<input type="button" value="Apply"/>
Mail	
SNMP	
SSL	

Configuration: Network

PDU network information

Enable DHCP: Change the way to get IP address for PDU.

PDU	
Total load: 0.4 A , Status: Normal	
Information	IP Address
PDU	Host Name <input type="text" value="DIGIBOARD"/>
System	IP Address <input type="text" value="192.168.0.80"/>
Configuration	Subnet Mask <input type="text" value="255.255.255.0"/>
	Gateway <input type="text" value="192.168.0.1"/>
	<input checked="" type="checkbox"/> Enable DHCP
	DNS Server IP
Threshold	Primary DNS IP <input type="text" value="192.168.0.1"/>
User	Secondary DNS IP <input type="text" value="139.75.253.23"/>
Network	<input type="button" value="Apply"/>
Mail	
SNMP	
SSL	

Configuration: Mail

When event occurs, PDU can send out email message to pre-defined account.

Email Server: The Email Server only support to be input domain name, not IP address.

Sender's Email: Input the sender email address.

Email Address: Input the recipient email address.

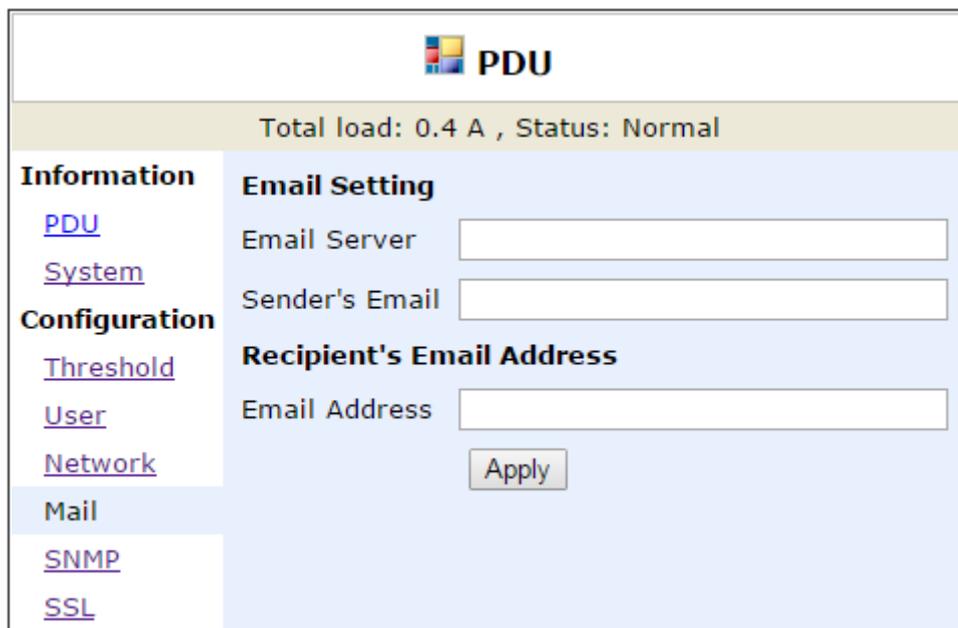
The message in the email:

Indicate OutletA~H-XXXXXXXX status in order

X=0 : means the power off.

X=1 : means the power on.

Note: Make sure DNS server can resolve the Email Server's domain name.



The screenshot shows the PDU configuration interface. At the top, there is a header with the PDU logo and the text "Total load: 0.4 A , Status: Normal". Below this, there is a navigation menu on the left with the following items: Information (with sub-links for PDU and System), Configuration (with sub-links for Threshold, User, Network, Mail, SNMP, and SSL), and Mail (which is currently selected). The main content area is titled "Email Setting" and contains three input fields: "Email Server", "Sender's Email", and "Recipient's Email Address". An "Apply" button is located below the "Recipient's Email Address" field.

Configuration: SNMP

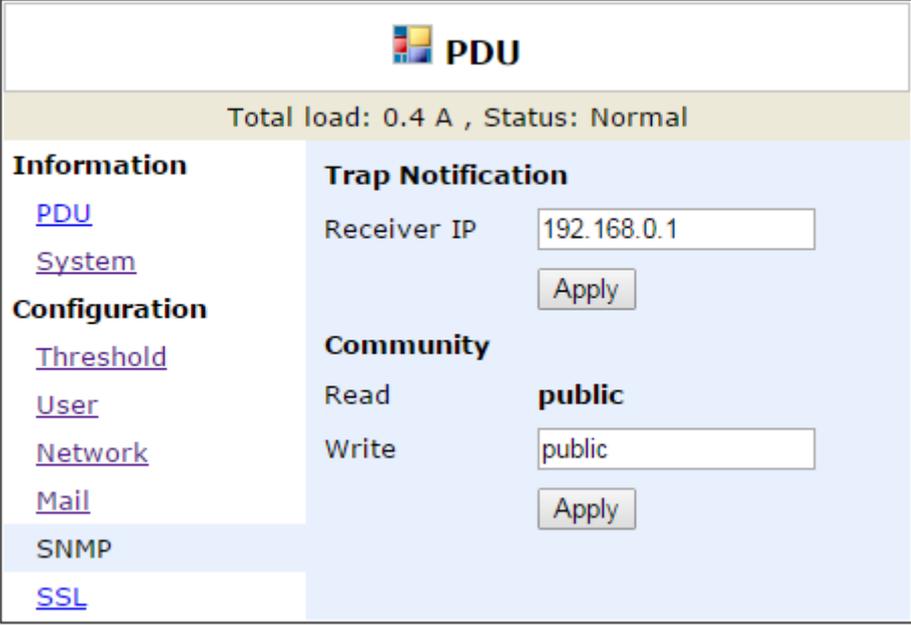
When event occurs, PDU can send out trap message to pre-defined IP address.

Trap Notification: Set receiver IP for trap.

Community: Set SNMP community.

Read Community is public and fixed.

Default Write Community is "public" and can be modified by user.



The screenshot displays the PDU configuration interface. At the top, the PDU logo is shown next to the text "PDU". Below this, a status bar indicates "Total load: 0.4 A , Status: Normal". The interface is divided into two main sections: "Information" and "Configuration".

Information: Contains links for "PDU" and "System".

Configuration: Contains links for "Threshold", "User", "Network", "Mail", "SNMP", and "SSL". The "SNMP" link is currently selected.

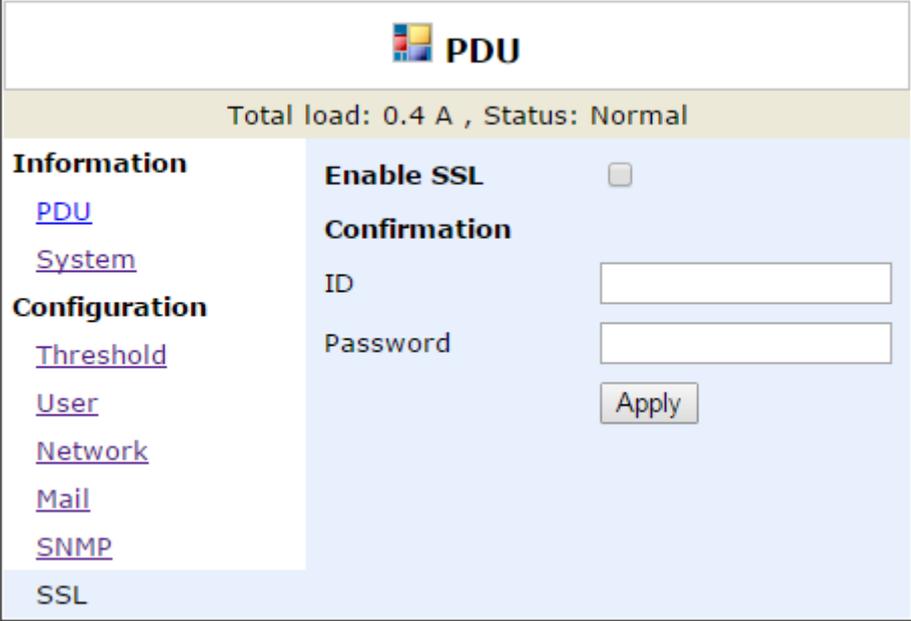
Trap Notification: This section is active and shows the "Receiver IP" field set to "192.168.0.1" with an "Apply" button below it.

Community: This section shows the "Read" community set to "public" and the "Write" community set to "public" in a text input field, with an "Apply" button below it.

Configuration: SSL

Enable SSL for web communication.

User must input the correct ID and password to enable SSL function. The ID and password must be the same with the setting in "User".



The screenshot shows a web interface for a PDU. At the top, there is a logo with the text "PDU". Below the logo, a status bar indicates "Total load: 0.4 A , Status: Normal". The main content area is divided into two columns. The left column contains a navigation menu with the following items: "Information" (with sub-links for "PDU" and "System"), "Configuration" (with sub-links for "Threshold", "User", "Network", "Mail", "SNMP", and "SSL"), and "SSL" (which is currently selected). The right column displays the "Enable SSL" configuration. It features a checkbox labeled "Enable SSL" which is currently unchecked. Below this is a "Confirmation" section with two input fields: "ID" and "Password". An "Apply" button is located at the bottom of the configuration area.