

Switched PDU

User Manual

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1. Introduction

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.

CAUTION: This PDU contains LETHAL VOLTAGES. All repairs and service should be performed by AUTHORIZED SERVICE PERSONNEL ONLY. There are NO USER SERVICEABLE PARTS inside the PDU. The installation of options, routine maintenance, and service of this product must be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with AC power products.

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.
- 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.

Switched PDU series

- Real time to control outlets of PDU.
- Indicate outlets status with LED.
- Support power on sequence.

2. PDU Package

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

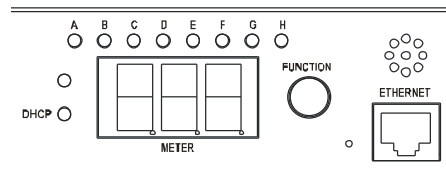
- Power Distribution Unit.
- Rack mount Brackets.

3. Function

Interface

Switched PDU

(Single Circuit)



Interface	Number	Protocol/Specification
RJ45	1	Ethernet connection. Support ICMP, ARP, IP, TCP, UDP, DHCP, HTTP, SNMPv1
Reset Hole	1	Restart Network System
Button	1	1 beep : Current, Temp./Humidity Display 2 Beeps : IP Display. 4 Beeps : DHCP/Fixed 6 Beeps : Reset to Default
Seven Segments	3 digits	True RMS Meter Range: 0.2A ~ 20 A Precision: +/-2%+/-0.1AMP
Green LED	8	Press Button after 2 Beeps will display PDU IP Address Outlet Status: Indicate output power status.
Green LED	1	DHCP: Light on means that PDU gets IP address through DHCP.
Circuit Breaker		Overload power protection. (When the current is overloaded, the breaker will trip and cut off the power to avoid the danger of the current overload. After the user eliminates the factors causing the current overload, the Breaker can be reset. (Press or toggle Breaker))

4. Installation

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

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.

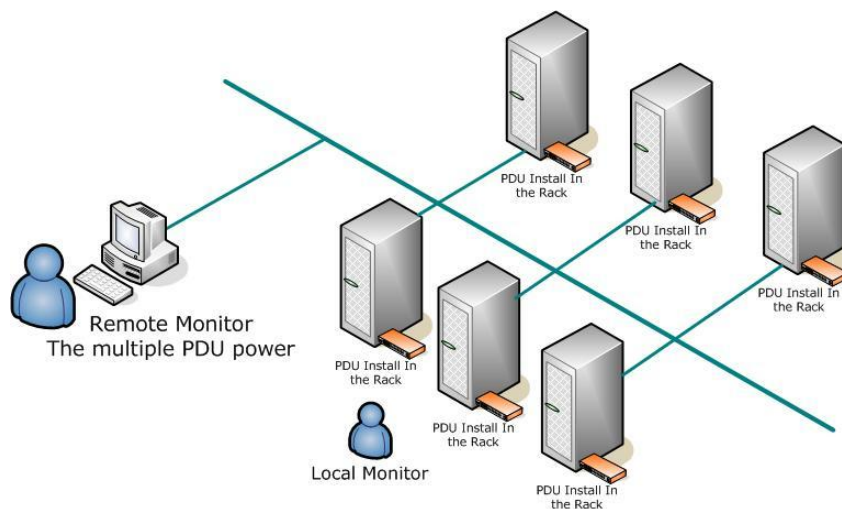
B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

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



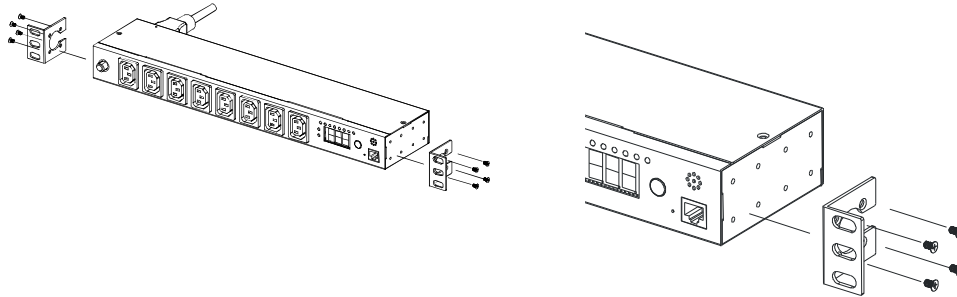
Hardware

1. The PDU comes with brackets for mounting in a rack. To mount the PDU into a rack

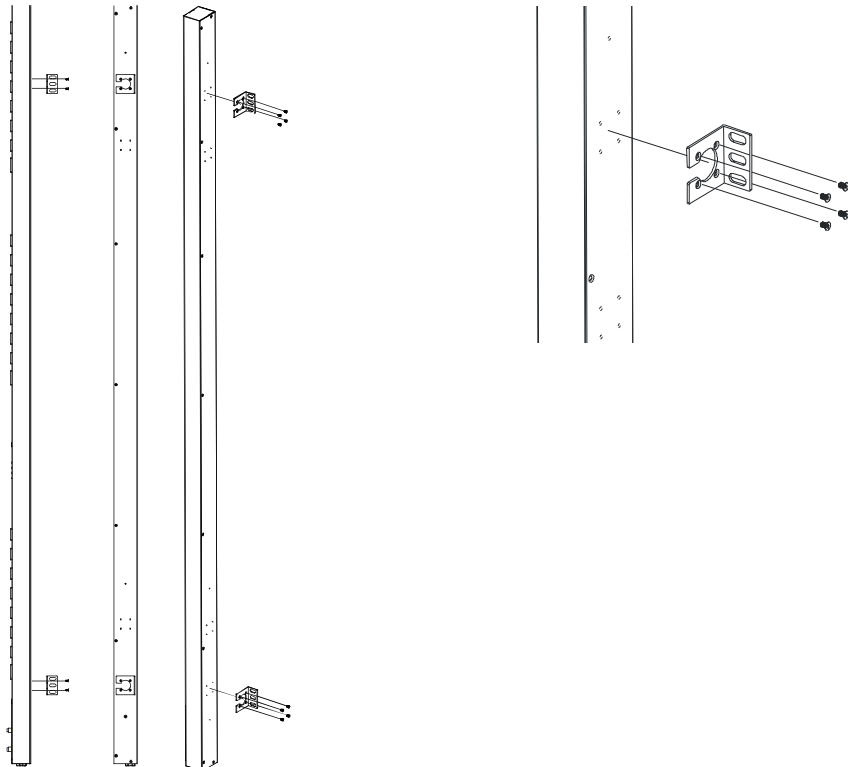
performs the following procedure:

Attach the mounting brackets to the unit, using the four retaining screws provided for each of the brackets.

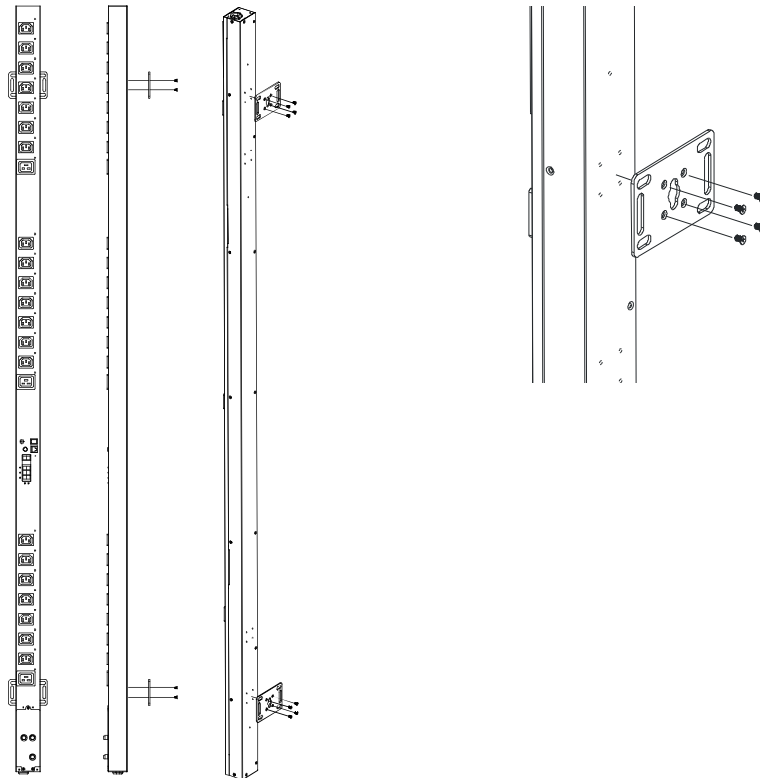
Mounting kits for 1U



Mounting kits 1 for 0U (The kits included with the PDU vary according to the model)



Mounting kits 2 for 0U (The kits included with the PDU vary according to the model)



2. Choose a location for the brackets.
3. Align the mounting holes of brackets with the notched hole on the vertical rail and attach with the retaining screws.
4. Connect input and output power.
5. Connect Ethernet cable to the PDU.
6. Switch on the PDU.



WARNING:

Observe the following instructions to help prevent potential for property damage, personal injury, or death:

The power supplies in your system may produce high voltage and energy hazards. Opening or removing covers that are marked with the triangle symbol with a lightning bolt may expose you to a risk of electric shock. Components inside these compartments should be serviced only by a trained service technician.

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.

Note 3:

The output can only be connected to a single device. Do not use extension cords to power multiple devices, so as not to damage the output relay due to the accumulation of inrush currents from multiple devices.

Note 4:

After the PDU is started, the PDU will sequentially power on the output. When the first socket of each circuit is powered on, if a power interruption occurs and the subsequent sockets have not completed the power-on action; the PDU will remember the output status at this time : the first socket of each circuit is in the power-on state, and the other sockets are in the off state.

When the PDU is powered on next time, the PDU will only power on the first socket of each circuit, and none of the others will be powered on.

The solution is to log in to the PDU web page, use the web control page, and power on the output to solve the problem.

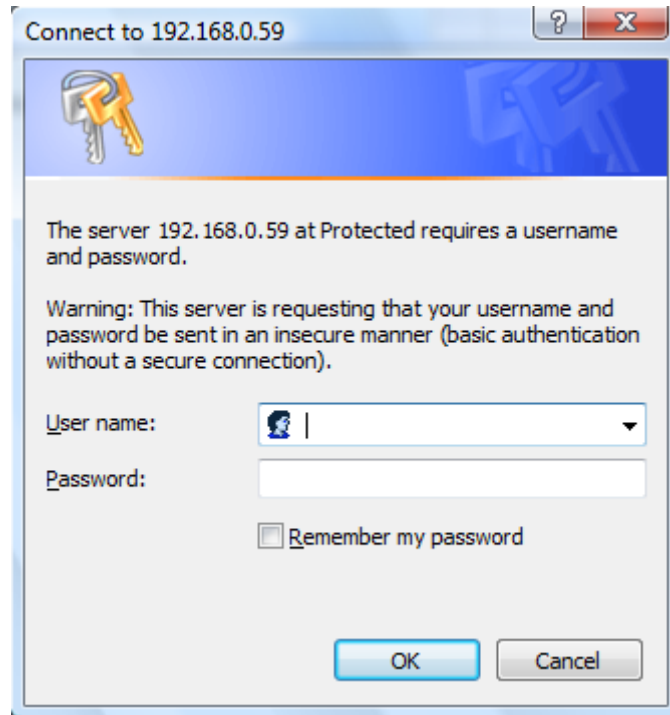
5. Web Interface

Login:

Input the PDU IP address in web browser.


Default ID is snmp.

Password is 1234.




Information: PDU

Display total PDU power consumption.

 PDU		
Total load: 0.0 A , Status: Normal		
Information	PDU	
PDU	PDU	0.0 A Normal
System		
Control	Threshold	
Outlet	Warning	12.0 A
Configuration	Overload	16.0 A
PDU		
Threshold		
User		
Network		
Mail		
SNMP		

Information: System

Indicate PDU system information.

 PDU		
Total load: 0.0 A , Status: Normal		
Information	Model No.	SWH-1623K-08N1
PDU	Firmware Version	s4.82-091012-1cb08s
System	MAC Address	00:16:18:77:1E:44
Control	System Name	<input type="text" value="PDU"/>
Outlet	System Contact	<input type="text" value="Admin"/>
Configuration	Location	<input type="text" value="Office"/>
PDU		<input type="button" value="Apply"/>
Threshold		
User		
Network		
Mail		
SNMP		

Control: Outlet

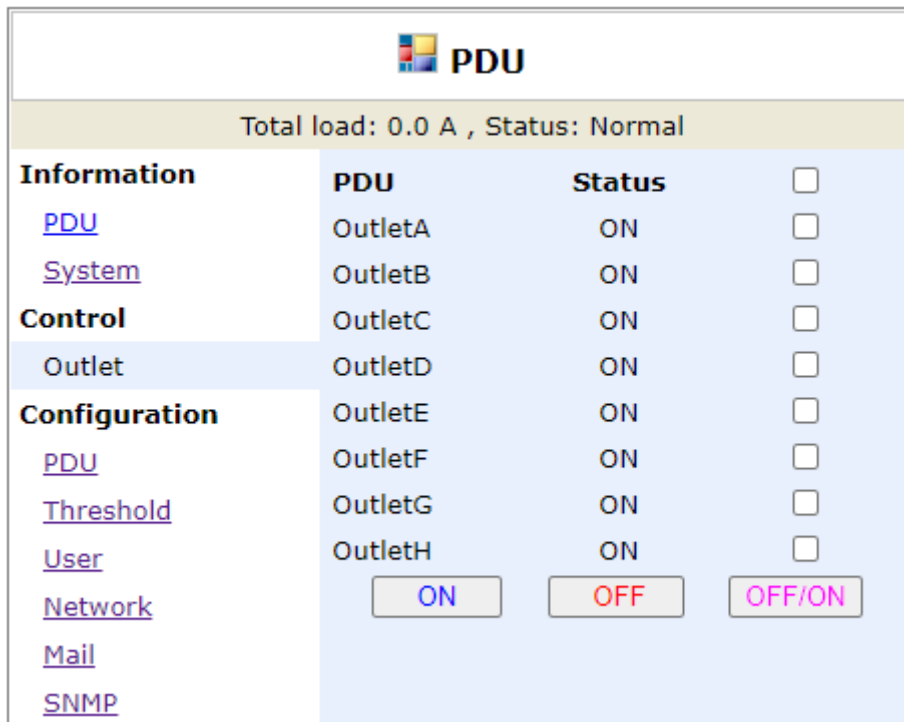
Indicate PDU outlet on/off status and control outlet. Display the number of outlet by different model.

Select the outlet by checking the box and then click ON or OFF button to control output power for PDU

ON: Press the icon to turn on the assigned outlets.

OFF: Press the icon to turn off the assigned outlets.

OFF/ON: Press the icon to reboot the assigned outlets.



The screenshot displays a web interface for a PDU. At the top, there is a logo and the text "PDU". Below this, a status bar shows "Total load: 0.0 A , Status: Normal". The main content is a table with three columns: "Information", "PDU", and "Status". The "Information" column contains links for "PDU", "System", "Control", "Configuration", "PDU", "Threshold", "User", "Network", "Mail", and "SNMP". The "PDU" column lists outlets from "OutletA" to "OutletH". The "Status" column shows "ON" for all outlets and a checkbox for each. At the bottom of the table, there are three buttons: "ON" (blue), "OFF" (red), and "OFF/ON" (pink).

Information	PDU	Status	
PDU	OutletA	ON	<input type="checkbox"/>
System	OutletB	ON	<input type="checkbox"/>
Control	OutletC	ON	<input type="checkbox"/>
Outlet	OutletD	ON	<input type="checkbox"/>
Configuration	OutletE	ON	<input type="checkbox"/>
PDU	OutletF	ON	<input type="checkbox"/>
Threshold	OutletG	ON	<input type="checkbox"/>
User	OutletH	ON	<input type="checkbox"/>
Network			
Mail			
SNMP			

ON OFF OFF/ON

Configuration: PDU

Set the outlet name and delay time.

Name: Rename the outlet.

ON: Set delay time for power on sequential.

OFF: Set delay time for power off sequential.

Note: The maximum delay time is 255 seconds.

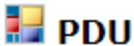
PDU			
Total load: 0.0 A , Status: Normal			
Information	Name	ON Delay(sec)	OFF Delay(sec)
PDU	OutletA	1	1
System	OutletB	2	2
Control	OutletC	3	3
Outlet	OutletD	4	4
Configuration	OutletE	5	5
PDU	OutletF	6	6
Threshold	OutletG	7	7
User	OutletH	8	8
Network			
Mail			
SNMP			
	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>

Configuration: Threshold

Set the warning and overload threshold for each circuit.

Set lower and upper threshold for temperature and humidity.

Note: The threshold value can only be entered as an integer

 **PDU**

Total load: 0.0 A , Status: Normal

	Name	Threshold (Amp)	
		Warning	Overload
Information PDU System	PDU	<input type="text" value="12"/>	<input type="text" value="16"/>
Control Outlet		<input type="button" value="Apply"/>	
Configuration PDU Threshold User Network Mail SNMP			

Configuration: User

Change ID and password.

Default ID is snmp and password is 1234.

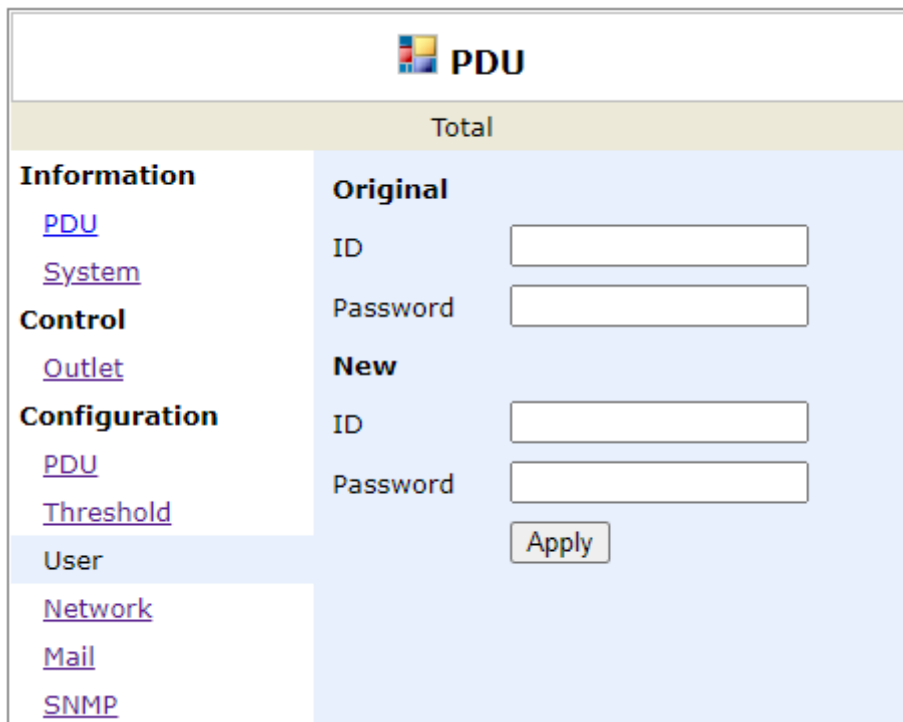
Note:

Maximum character number of ID and password is 12.

ID and password cannot use special characters.

ID must be at least 4 characters

Password must be at least 4 characters



The screenshot shows a web-based configuration interface for a PDU. At the top, there is a header with a logo and the text "PDU". Below the header is a navigation bar with the word "Total". The main content area is divided into two columns. The left column contains a sidebar menu with the following items: "Information" (with sub-links for "PDU" and "System"), "Control" (with sub-link for "Outlet"), "Configuration" (with sub-links for "PDU", "Threshold", "User", "Network", "Mail", and "SNMP"), and "User" (which is currently selected). The right column is titled "Original" and "New" and contains two sets of input fields for "ID" and "Password". An "Apply" button is located at the bottom of the right column.

PDU	
Total	
Information	Original
PDU	ID <input type="text"/>
System	Password <input type="text"/>
Control	New
Outlet	ID <input type="text"/>
Configuration	Password <input type="text"/>
PDU	<input type="button" value="Apply"/>
Threshold	
User	
Network	
Mail	
SNMP	

Configuration: Network

PDU network information

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

Note: The maximum length of host name is 14 characters.

PDU	
Total	
Information	IP Address
PDU	Host Name <input type="text" value="DIGIBOARD"/>
System	IP Address <input type="text" value="192.168.2.39"/>
Control	Subnet Mask <input type="text" value="255.255.255.0"/>
Outlet	Gateway <input type="text" value="192.168.2.1"/>
Configuration	<input type="checkbox"/> Enable DHCP
PDU	DNS Server IP
Threshold	Primary DNS IP <input type="text" value="192.168.2.1"/>
User	Secondary DNS IP <input type="text" value="168.95.1.1"/>
Network	<input type="button" value="Apply"/>
Mail	
SNMP	

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.

PDU	
Total	
Information	Email Setting
PDU	Email Server <input type="text"/>
System	Sender's Email <input type="text"/>
Control	Recipient's Email Address
Outlet	Email Address <input type="text"/>
Configuration	<input type="button" value="Apply"/>
PDU	
Threshold	
User	
Network	
Mail	
SNMP	

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.

 **PDU**

Total load: 0.0 A , Status: Normal

Information PDU System	Trap Notification Receiver IP <input style="width: 150px;" type="text"/> <input type="button" value="Apply"/>
Control Outlet	Community
Configuration PDU Threshold User Network Mail	Read public Write <input style="width: 150px;" type="text" value="public"/> <input type="button" value="Apply"/>
SNMP	