**NRGence eco PDU PE Series**
**PE7216r / PE7324r / PE8216r / PE8324r /**
**PE9216r / PE9324r**
**Power Distribution Unit**
**User Manual**

www.aten.com

# FCC, CE Information

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# RoHS

This product is RoHS compliant.

# SJ/T 11364-2006

The following contains information that relates to China.

| 部件名称 | 有毒有害物质或元素 | | | | | |
|---|---|---|---|---|---|---|
| | 铅 | 汞 | 镉 | 六价铬 | 多溴联苯 | 多溴二苯醚 |
| 电器部件 | ● | ○ | ○ | ○ | ○ | ○ |
| 机构部件 | ○ | ○ | ○ | ○ | ○ | ○ |

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

✕: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

# User Information

## Online Registration

Be sure to register your product at our online support center:

| International | http://eservice.aten.com |
|---|---|

## Telephone Support

For telephone support, call this number:

| International | 886-2-8692-6959 |
|---|---|
| China | 86-10-5255-0110 |
| Japan | 81-3-5615-5811 |
| Korea | 82-2-467-6789 |
| North America | 1-888-999-ATEN ext 4988 |
| United Kingdom | 44-8-4481-58923 |

## User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

## PE Device Safety Notice

- Set the maximum permissible breaker protection in the building circuitry to the current rating specified on the rating plate. Observe all national regulations and safety codes as well as deviations for breakers.
- Only connect the PE Device to a grounded power outlet or a grounded system!
- Make sure that the total current input of the connected systems does not exceed the current rating specified on the rating plate of the PE Device.
- There is a risk of explosion if the battery is replaced with an incorrect type. Dispose of used batteries according to the relevant instructions.

# Package Contents

The eco PDU PE Series package consists of:

1 PE7216r / PE7324r or PE8216r / PE8324r or PE9216r / PE9324r Power Distribution Unit

1 Power Cord (16-port models only)

4 Serial Adapter

1 Mounting Kit

1 CD-ROM

1 User Instructions*

Check to make sure that all of the components are present and in good order. If anything is missing, or was damaged in shipping, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the switch or to any other devices on the eco PDU installation.

**\*** Features may have been added to the eco PDU since this manual was published. Please visit our website to download the most up-to-date version.

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## Chapter 7.
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# Conventions

This manual uses the following conventions:

| | |
|---|---|
| Monospaced | Indicates text that you should key in. |
| [ ] | Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt]. |
| 1. | Numbered lists represent procedures with sequential steps. |
| ♦ | Bullet lists provide information, but do not involve sequential steps. |
| → | Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*. |
| ⚠ | Indicates critical information. |

# Product Information

For information about all NRGence products and how they can help you save money in the data center, visit NRGence on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers

- International – **http://www.aten.com**
- North America – **http://www.aten-usa.com**

# Chapter 1
# Introduction

## Overview

As part of its NRGence line, ATEN has developed a new generation of green energy power distribution units (eco PDUs) to effectively increase the efficiency of data center power usage. The NRGence PE7216r / PE7234r / PE8216r / PE8324r / PE9216r / PE9324r eco PDUs are intelligent PDUs that contain 16 or 24 AC outlets and are available in various IEC or NEMA socket configurations. Models in the advanced PE9 range feature a dedicated 8-outlet bank for critical load devices, as well as NRGence's proactive overload protection, which automatically powers off the last outlet that caused the current overload.

NRGence eco PDUs provide secure, centralized, intelligent, power management (power on, off, cycle) of data center IT equipment (servers, storage systems, KVM switches, network devices, serial data devices, etc.), as well as the ability to monitor the center's health environment via sensors*. The basic characteristics of each model are shown in the table on page 3.

NRGence eco PDUs offer remote power control combined with real-time power measurement – allowing you to control and monitor the power status of devices attached to the PDUs, either at the PDU device, bank, or outlet level, depending on the model, from practically any location via a TCP/IP connection*.

The power status of each outlet can be set individually, allowing users to switch each device On/Off. The eco PDU also offers comprehensive power analysis reports which can separate departments and locations, providing precise measurements of current, voltage, power and watt-hour in a real-time display.

Installation and operation is fast and easy: plugging cables into their appropriate ports and user-friendly browser-based configuration and management is all that is entailed. Since the eco PDU firmware is upgradeable over the Net, you can stay current with the latest functionality improvements simply by downloading updates from our website as they become available.

NRGence eco PDU supports any 3rd party V1, V2, V3 SNMP Manager Software and NRGence eco Sensors (eco PDU Manager Software). eco Sensors provides you with an easy method for managing multiple devices, offering an intuitive and user-friendly Graphical User Interface that allows you

to configure a PDU device and monitor power status of the equipment connected to it.

With its advanced security features and ease of operation, the eco PDU is the most convenient, most reliable, and most cost effective way to remotely manage power access for multiple computer installations and allocate power resources in the most efficient way possible.

**Note:** 1. Sensors are optional accessories. A sensor-enabled installation is required to generate a more complete energy-efficient data and chart. Higher sensor installation density is helpful to generate more accurate data. See *Optional Accessories*, page 8, for further information.

2. eco PDUs are primarily designed for access via Intranet; extra network security protection is suggested for Internet access usage.

3. Not all models support all features. See *PE7216r / PE7234r / PE8216r / PE8324r / PE9216r / PE9324r Comparison Chart*, page 3, and *Specifications*, page 101, for full details.

## PE7216r / PE7234r / PE8216r / PE8324r / PE9216r / PE9324r Comparison Chart

| Model | Inlet / Cord | Outlets | | Metering Level | Outlet Switching |
|---|---|---|---|---|---|
| PE7216rB | NEMA 6-20P | 16 | 14 x IEC 320 C13 + 2 x IEC 320 C19 | PDU / 1 x Bank / Outlet | No |
| PE8216rB | | | | | Yes 16/16 |
| PE9216rB | | | | | Yes 8/16 |
| PE7216rG | IEC 60320 C20 | | | | No |
| PE8216rG | | | | | Yes 16/16 |
| PE9216rG | | | | | Yes 8/16 |
| PE7324rB / PE7324rJ | NEMA L6-30P | 24 | 21 x IEC 320 C13 + 3 x IEC 320 C19 | PDU / 2 x Bank / Outlet | No |
| PE8324rB / PE8324rJ | | | | | Yes 24/24 |
| PE9324rB / PE9324rJ | | | | | Yes 16/24 |
| PE7324rG | IEC 60309 32A | | | | No |
| PE8324rG | | | | | Yes 24/24 |
| PE9324rG | | | | | Yes 16/24 |

**Note:** For the complete specifications of individual models, including bank-by-bank outlet details, please reference *Specifications*, page 101.

# Features

## Power Distribution

- ◆ Space saving 0U rack mount design with rear mounting
- ◆ IEC or NEMA outlet models
- ◆ 2 digit 7-segment front panel LED shows Station / Bank / Outlet ID
- ◆ 3 digit 7-segment front panel LED shows Current / Voltage / Power Dissipation and readings from up to 4 environment sensors
- ◆ Safe shutdown support
- ◆ Daisy chain up to 5 additional stations
- ◆ Separate power for the unit's own power and its power outlets – the user interface is still accessible even when an overload condition trips the devices' circuit breaker
- ◆ Dedicated 8-outlet bank for critical load devices (PE9 models only) – always powered on
- ◆ Proactive overload protection (POP) (PE8 and PE9 models only) – automatically powers off the last outlet that caused the current overload (see *Proactive Overload Protection (POP) (PE9 series)*, page 6)

## Remote Access

- ◆ Remote power control via TCP/IP and a built in 10/100 Ethernet port
- ◆ Remote Access Network Protocols: Network Protocols: TCP/IP, PPP, UDP, HTTP, HTTPS, SSL, SMTP, DHCP, ARP, NTP, DNS, Telnet, 10Base-T/100Base-TX, Auto Sense, Ping
- ◆ Out of Band operation via modem access
- ◆ Remote users can monitor outlet status via web pages on their browsers
- ◆ eco PDU Power Management software – eco Sensors
- ◆ Supports SNMP Manager V1, V2 & V3
- ◆ IPv6 support

## Operation

- ◆ Remote power outlet control (On, Off, Power Cycle) by individual outlets (PE8 / PE9 models)
- ◆ Outlet group support – the same action can be performed on specified groups of outlets at the same time

- Supports multiple power control methods – Wake on LAN, System after AC Back, Kill the Power

- Power-on sequencing – set the power on sequence and delay time for each outlet to allow equipment to be powered on in the correct order

- Easy setup and operation via a browser-based user interface

- Multibrowser support (IE, Mozilla, Firefox, Chrome, Safari, Opera, Netscape)

- RTC support to keep the timer running during times of no power

- Up to 8 user accounts and 1 administrator account

## Management

- Power metering and monitoring at the PDU / Bank / Outlet level

- LED indicators for current, voltage, power dissipation at the PDU / Bank / Outlet levels

- Real-time aggregate current, voltage, and power and power dissipation displayed in a browser-based UI for monitoring at the PDU, bank and outlet level (16-port models offer 1 bank metering; 24-port models offer 2 bank metering)

- Alert notification for selected events (On, Off, Recycle, Failure, exceeding threshold settings, etc.), via blinking LEDs (locally), SMTP, SNMP trap notification, and digital output

- Supports Management Information Base (MIB) files for SNMP

- Environment monitoring – supports external temperature / humidity / differential pressure sensors for rack environment monitoring

- Current and voltage threshold setting

- Naming support for outlets and outlet groups

- User outlet access assignment on an outlet-by-outlet basis

- Event logging and syslog support

- Upgradeable firmware

- Multi-language support – English, Traditional Chinese, Simplified Chinese, Japanese, German, Italian, Spanish, French, Russian, Korean, Portuguese

## Security

- ◆ Two-level password security

- ◆ Strong security features include strong password protection and advanced encryption technologies – 128 bit SSL

- ◆ Remote authentication support: RADIUS

## *eco Sensors* Energy Management Software*

- ◆ Automatic discovery of all PE devices within the same intranet

- ◆ Remote real-time power measurement and monitoring

- ◆ Real-time environment sensor monitoring

- ◆ Plotting/monitoring of all PE devices

- ◆ Exceed threshold alert through SMTP and System log

- ◆ Power Analysis report

**Note:** eco Sensors is designed to work with NRGence PDUs, and is bundled with all PE series packages.

## Proactive Overload Protection (POP) (PE9 series)

The PE9216r and PE9324r models feature NRGence's exclusive Proactive Overload Protection (POP) technology. Effective on outlets 9–16, this added safety feature automatically powers off the last outlet that caused the current overload.

POP mode is engaged when the Bank 1 current exceeds the set threshold maximum value, powering off the outlet. The LED display shows POP and a beeper sounds. Press any button for two seconds to clear POP modem and power the outlet back on.

# Requirements

* Browsers accessing the eco PDU unit must support SSL 128 bit encryption.

* For cold booting of attached computers, the computer's BIOS must support *Wake on LAN* or *System after AC Back*.

* For Safe Shutdown:
    * The computer must be running Windows (Windows 2000 or higher) or Linux.
    * The *Safe Shutdown* program (available by download from our website or on the software CD included), must be installed and running on the computer.

# Optional Accessories

## Sensors

For complete energy management of an instrumented data center with the use of the eco PDU and eco Sensors software, you should install 4 sensors for each of the racks in your data center in order to generate a complete energy-efficient data chart. Higher sensor installation density is helpful to generate more accurate data. 8/16-port models have 4 sensor ports. Higher sensor installation density is helpful to generate more accurate data.

To get the most complete eco Sensors Dashboard data, the recommended 4-sensor setup is show in the table, below:

| Port | Location | Part Number | Sensor |
|------|----------|-------------|--------|
| Sensor 1 | Intake | EA1140 or EA1240 | Temperature or Temperature / Humidity |
| Sensor 2 | Intake | | |
| Sensor 3 | Exhaust | | |
| Sensor 4 | Exhaust | | |
| | or Floor | EA1340 | Differential Pressure |

### Sensor Management

Sensors can be managed via the eco PDU's built-in graphical user interface (GUI) or with the NRGence eco Sensors software that can be downloaded from the ATEN website. The download link can be found on the software CD provided with the eco PDU package.

## Cable Holders

Cable holders are optional accessories. For added safety, use ATEN Lok-U-Plug cable holders to secure the cables from your attached devices in place on the eco PDU unit. Use only the ATEN Lok-U-Plug cable holders that have been specifically designed to work with the eco PDU. Using any other kind of cable securing device could be highly dangerous.

| Part Number | Description |
|-------------|-------------|
| 2X-EA07 | Lok-U-Plug Cable Holder (10 pcs) |
| 2X-EA08 | Lok-U-Plug Installation Tool (4 pcs) |

# Components

## PE7216r / PE8216r / PE9216r
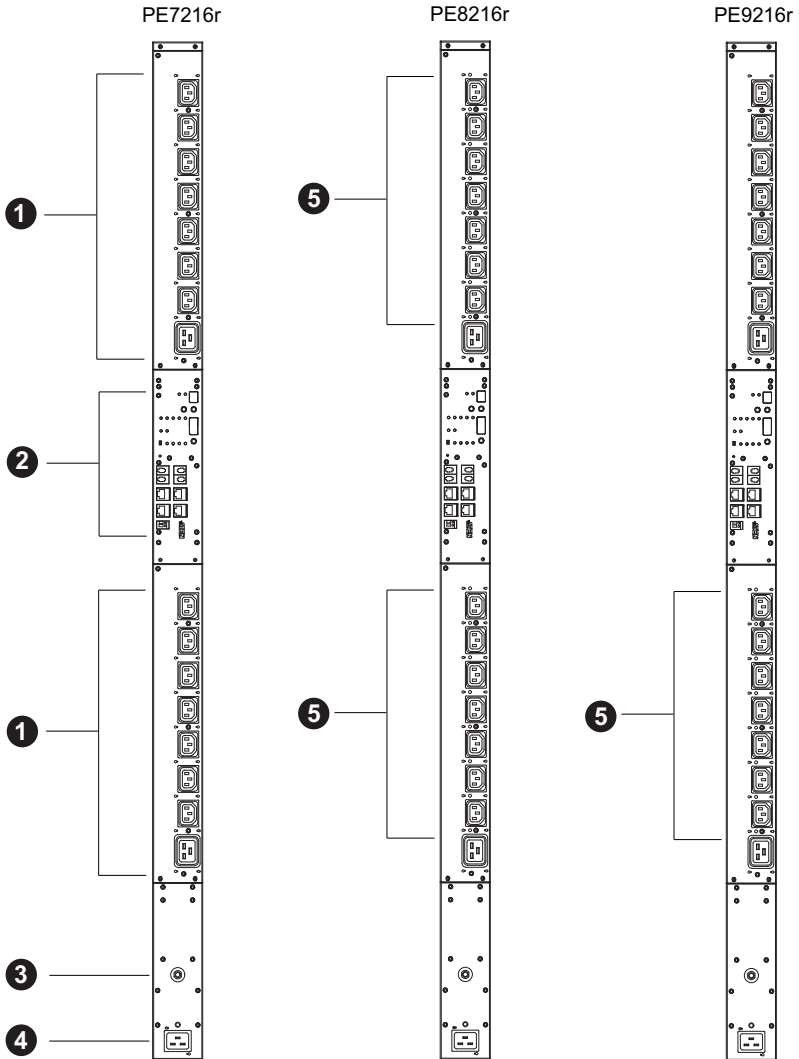


**Note:** The PE7216r / PE8216r / PE9216r unit components are identical except for the outlet LEDs – the PE7216r has none; the PE8216r has 16; and the PE9216r has 8, as shown by number 9 above.

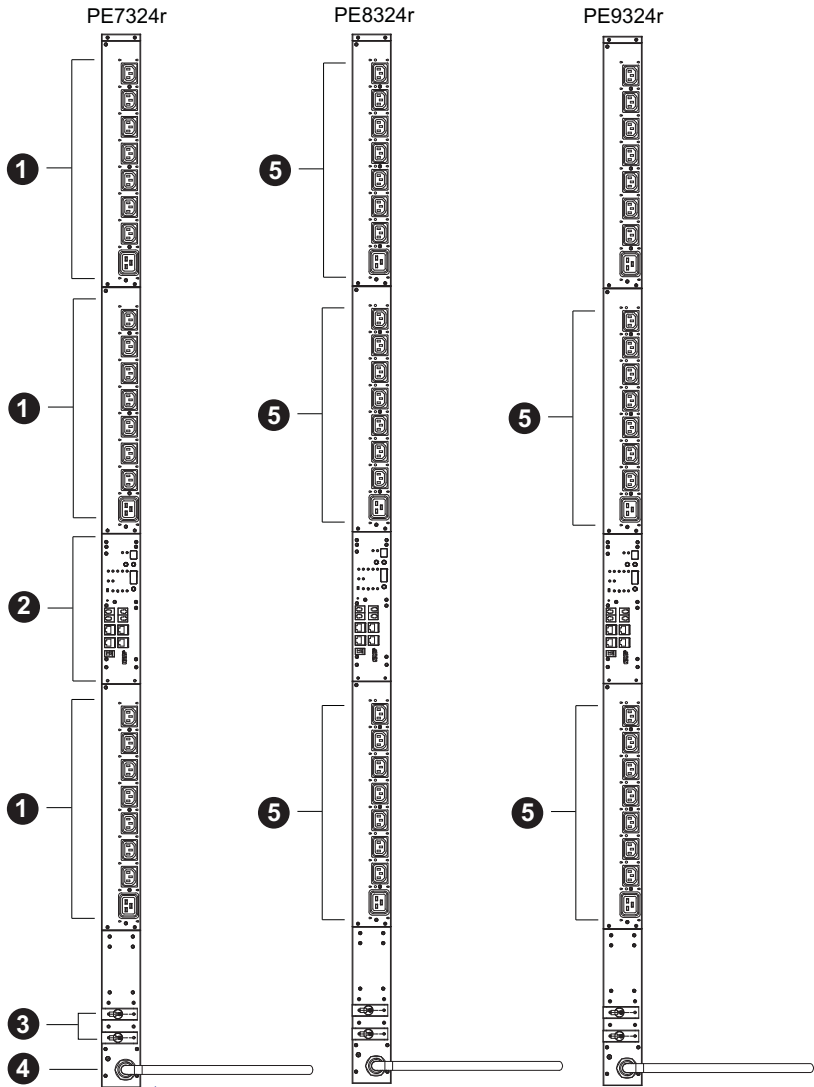| No. | Item | Description |
|-----|------|-------------|
| 1 | Power Outlets* | 16 in total (14 x IEC 320 C13 + 2 x IEC 320 C19)<br>Bank 1-1: Outlet 1–8: 7 C13; 1 x C19<br>Bank 1-2: Outlet 9–16: 7 x C13; 1 x C19 |
| 2 | Port and LED Panel | The Port and LED panel contains:<br><br>◆ Readout Section and LEDs<br><br>◆ Sensor Ports<br><br>◆ LAN and Modem Ports<br><br>◆ Console/PON In and PON Out Ports<br><br>◆ Digital Output Port<br><br>◆ Reset Switch<br><br>Full details of this section are provided on page 13. |
| 3 | Circuit Breaker Pushbutton | As a safety measure, if there is an overcurrent situation regarding the device's power, the circuit breakers will trip. Press the button to recover normal operation. |
| 4 | Power Inlet | The power cord that connects the unit to an AC power source plugs into this socket.<br><br>◆ B models connect to a NEMA 6-20P source<br><br>◆ G models connect to an IEC 60309 32A source |
| 5 | Outlet Status LEDs | PE8216r (x 16) and PE9216r (x 8) only.<br>These LEDs indicate outlet status.<br>Lights ORANGE for powered on.<br>Off for powered off. |

**Note:** Holes for ATEN Lok-U-Plug cable holders are located around the outlets. See *Securing the Cables*, page 20, for further information.

## PE7324r / PE8324r / PE9324r



**Note:** The PE7324r / PE8324r / PE9324r unit components are identical except
for the outlet LEDs – the PE7324r has none; the PE8324r has 16; and
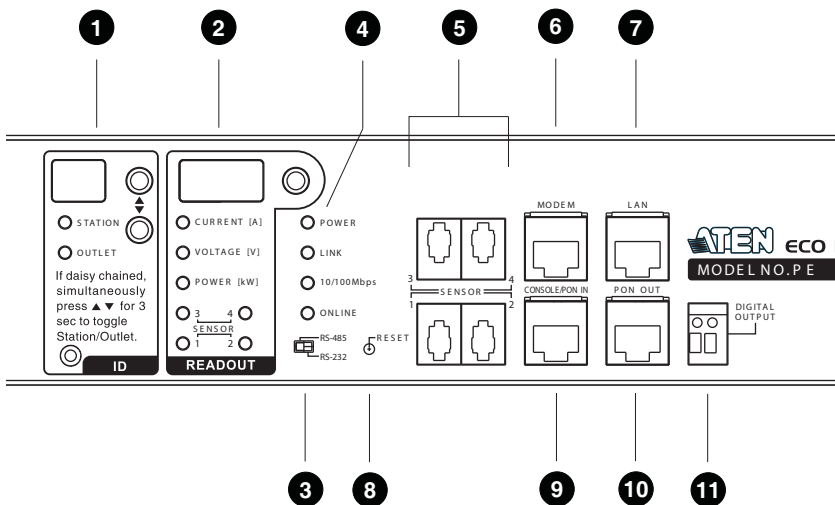the PE9324r has 8, as shown by number 5 above.

| No. | Item | Description |
|-----|------|-------------|
| 1 | Power Outlets* | 24 in total (21 x IEC 320 C13 + 3 x IEC 320 C19)<br>Bank 1-1: Outlet 1–8: 7 C13; 1 x C19<br>Bank 1-2: Outlet 9–16: 7 x C13; 1 x C19<br>Bank 2: Outlet 17–24: 7 x C13; 1 x C19 |
| 2 | Port and LED Panel | The Port and LED panel contains:<br><br>◆ Readout Section and LEDs<br><br>◆ Sensor Ports<br><br>◆ LAN and Modem Ports<br><br>◆ Console/PON In and PON Out Ports<br><br>◆ Digital Output Port<br><br>◆ Reset Switch<br><br>Full details of this section are provided on page 13. |
| 3 | Circuit Breakers | As a safety measure, if there is an overcurrent situation regarding the device's power, the circuit breakers will trip. Press the button to recover normal operation. |
| 4 | Power Cord | Plug the cord into an AC power source.<br>◆ B models connect to a NEMA 6-20P source<br><br>◆ G models connect to an IEC 60309 32A source |
| 5 | Outlet Status LEDs | PE8324r (x 24) and PE9324r (x 16) only.<br>These LEDs indicate outlet status.<br>Lights ORANGE for powered on.<br>Off for powered off. |

**Note:** Holes for ATEN Lok-U-Plug cable holders are located around the outlets. See *Securing the Cables*, page 20, for further information.

## Port and LED Panel



| No. | Item | Description |
|-----|------|-------------|
| 1 | ID Section | ◆ The ID of the selected Station / Bank / Outlet appears in the LED display window.<br>◆ When the Station LED is lit, use the Up and Down buttons to move forward or backward through the following sequence: 01 → b1 → b2 → 01 (Station → Bank1 → Bank2 → Station)<br>◆ When the Outlet LED is lit, use the Up and Down buttons to move forward or backward through the outlets: 01 → 02 → 03 → ... 01 (Outlet1 → Outlet2 → Outlet3 → ... Outlet1)<br>◆ In a daisy chain installation, hold down both the Up and Down buttons for three seconds simultaneously to toggle between Station and Outlets. |
| 2 | Readout Section | ◆ When Station / Bank / Outlet is selected, readouts for Current, Voltage and Power Dissipation appear in the display window.<br>◆ Press the button next to the LED display window to cycle the selection between the items; the LEDs next to the items indicate which one the display relates to.<br>◆ When a sensor is selected, the display shows temperature / humidity / differential pressure according to the sensor type |
| 3 | RS-232/RS-485 Switch | Selects which protocol the PON In / Console port uses.<br>◆ For *PON In* use, select RS-232 or RS-485<br>◆ For *KVM switches*, select either RS-232 (can be used for shorter distances), or RS-485 (for longer distances).<br>◆ In a daisy chain, set the switch to RS-232 on all child devices. |

| No. | Item | Description |
|-----|------|-------------|
| 4 | Status LED | ◆ Power: Lights when the unit is powered up and ready to operate. |
| | | ◆ Link: Lights GREEN to indicate that a connection via the unit's RJ-45 Ethernet port has been established. Flashes to indicate data is being transmitted. |
| | | ◆ 10/100 Mbps: Lights ORANGE to indicate 10 Mbps data transmission speed. The LED lights GREEN to indicate 100 Mbps data transmission speed. |
| | | ◆ On Line: Lights to indicate that a connection to a KVM switch or a parent PDU has been established. Flashes to indicate that data is being transmitted. |
| 5 | Sensor Ports | External sensors plug into these four RJ-11 ports. See *Sensors*, page 8, and *Securing the Sensors*, page 21, for further information. |
| 6 | Modem Port | This port can be used for OOB dial in/dial back connection if the device becomes unavailable over the network. An SA0142 (DCE) adapter is required for this connection (see *Modem Session*, page 91, for details). |
| 7 | LAN Port | The cable that connects the unit to the Internet, LAN, or WAN plugs in here. |
| 8 | Reset Switch | This switch is recessed and must be pushed with a thin object, such as the end of a paper clip. |
| | | ◆ Press and release to reboot the device. |
| | | ◆ Press and hold for more that three seconds to reset the eco PDU to its factory default settings |
| 9 | PON In / Console Port | This is a multifunction port: |
| | | ◆ PON In: When used as a *PON In* port, it can: 1) Daisy chain the device to a parent PDU; or 2) Connect the device to a KVM switch. |
| | | ◆ Console: When used as a *Console* port, it can establish a serial terminal connection to a computer. An SA0151 (DTE) adapter is required for this connection |
| 10 | PON Out Port | When daisy chaining PDUs, the cable that connects to the child device plugs in here. |
| 11 | Terminal Block | This terminal block is for digital output. |

# Chapter 2
# **Hardware Setup**

## Before You Begin

⚠️ 1. Important safety information regarding the placement of this device is provided on page 95. Please review it before proceeding.

2. Make sure that power to all the devices you will be connecting have been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

## Rack Mounting

The eco PDU can be mounted in a 0U configuration on the side of a rack. To rack mount the device, use the rack mounting brackets that came with your device. The brackets can be mounted either near the top and bottom of the back panel, or the top and bottom ends of the device, as shown in the diagram below:
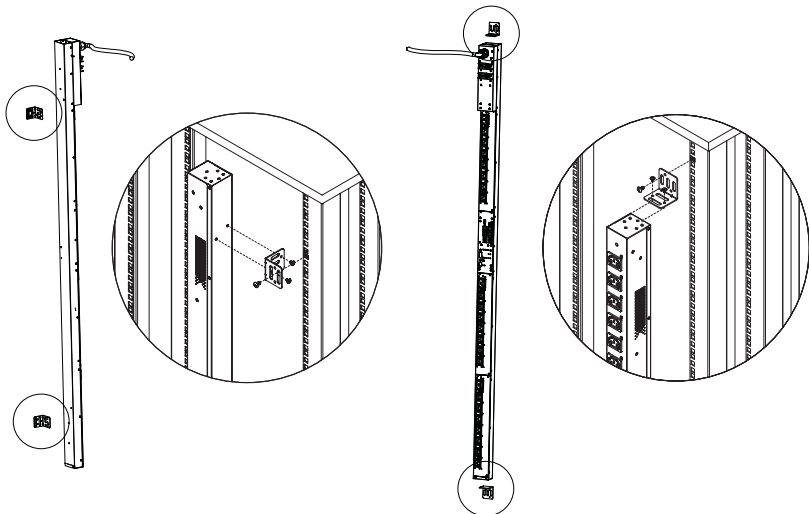
# PDU Placement

For safety reasons the eco PDU should <u>not</u> be installed with the power sockets facing directly up or down, and thus should only be installed with the power sockets facing out from a vertical position as shown below:

| | |
|---|---|
|  Floor | **Right.** |
|  Floor | **Wrong** |
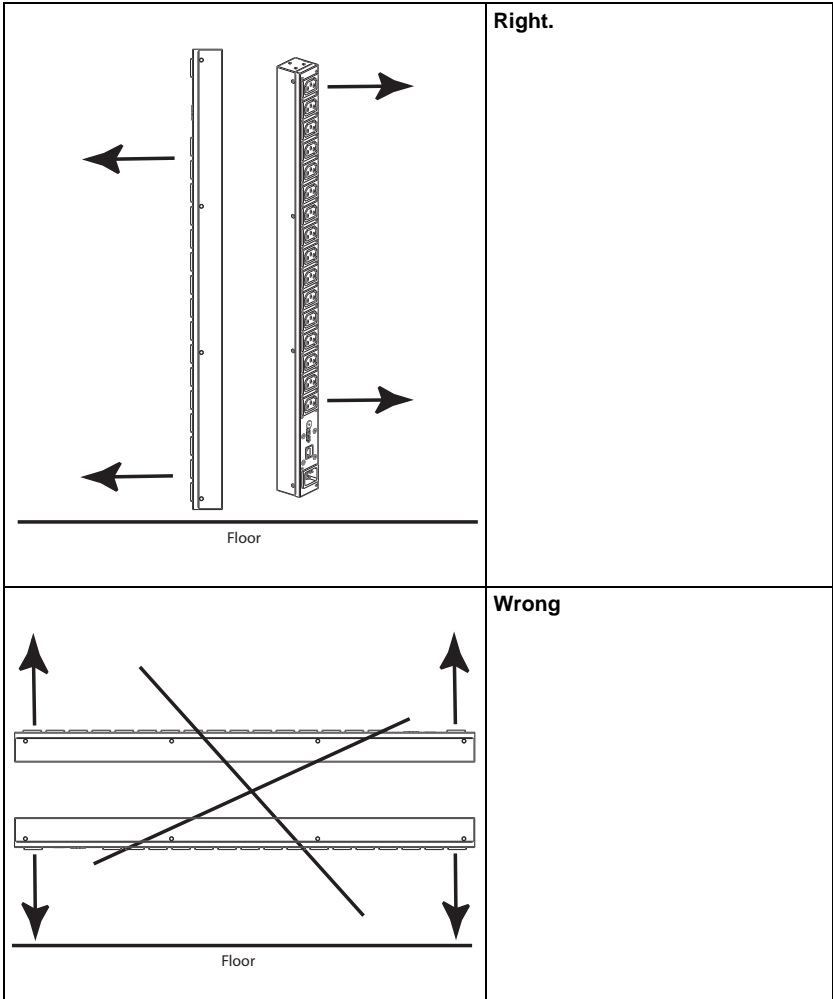
**Note:** The eco PDU models shown in the diagrams are for rack mount reference purposes only.

# Single Stage Installation

In a single stage installation, there are no additional eco PDU stations daisy chained down from the first unit. To set up your single stage installation, refer to the installation diagram on the next page (the numbers in the diagram correspond to the numbered steps), and do the following:

1. Ensure that the eco PDU unit is properly grounded.

   **Note:** Do not omit this step. Proper grounding helps to prevent damage to the unit from surges of static or electricity.

2. For each device you want to connect, use its power cable to connect from the device's AC socket to any available outlet on the eco PDU. Use ATEN Lok-U-Plug cable holders to secure them.

   **Note:** See *Securing the Cables*, page 20, for details.

3. Plug the cable that connects the eco PDU to the LAN into the eco PDU's LAN port.

4. (Optional) If you are using sensors in your eco PDU installation, connect them to the sensor ports on the unit's front panel.

   **Note:** Sensors are optional. Please see *Optional Accessories*, page 8, and the installation diagrams later in this chapter for further information.

5. (Optional) To connect a modem, use Cat 5e cable to connect the unit's Modem port to the SA0142 (DCE) adapter supplied with the package. Connect the adapter's serial connector to the modem's DB-9 port.

6. (Optional) To connect a digital output device, wire it to this two-pin terminal.

7. Depending on your model, connect the eco PDU's built-in power cord to an AC power source, or use the power cord provided to connect the eco PDU's power socket to an AC power source.

Once you have finished these installation steps, you can turn on the eco PDU and the connected devices.

# Single Stage Installation Diagram



SA0142
(DCE)

Modem
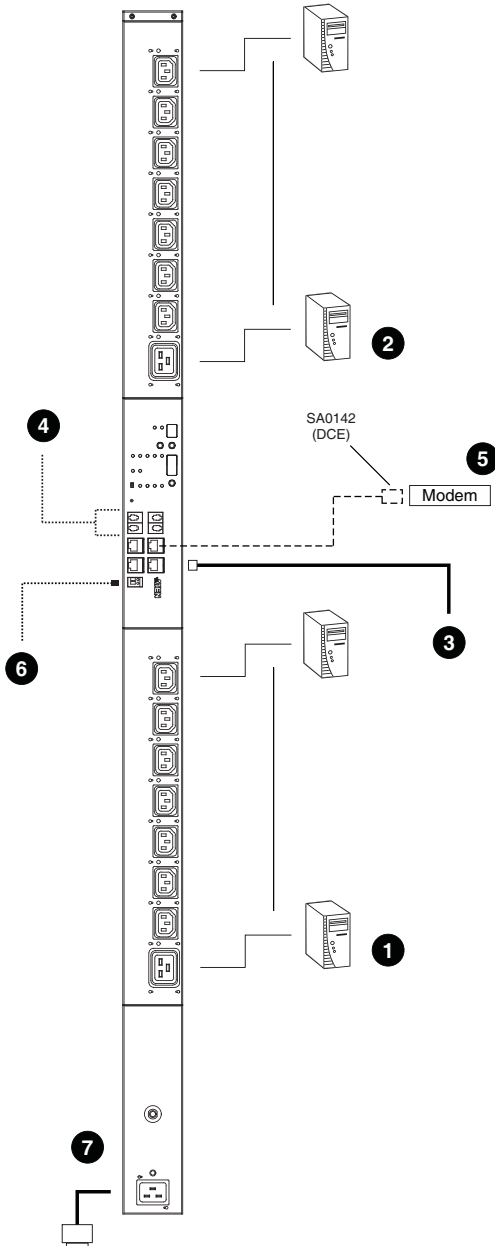
# Daisy Chaining

To manage even more outlets from the same single session as a standalone eco PDU, additional units can be daisy chained, as described in the following configuration.

**Note:** The maximum distance between any two units must not exceed 15 m; the total distance from the first station to the last must not exceed 100 m.

### eco PDU to eco PDU

Up to 5 additional eco PDU stations can be daisy chained down from the top level (master) device – allowing up to 120 outlets to be managed on a complete installation. To daisy chain an eco PDU, do the following:

1. Set the *RS-232/RS-485 switch* (see page 13), of the child device to the RS-232 setting.

2. Use Cat 5e cable to connect the PON OUT port of the parent device to the PON IN port of the child device.

3. Repeat the procedure for any additional devices you wish to connect.
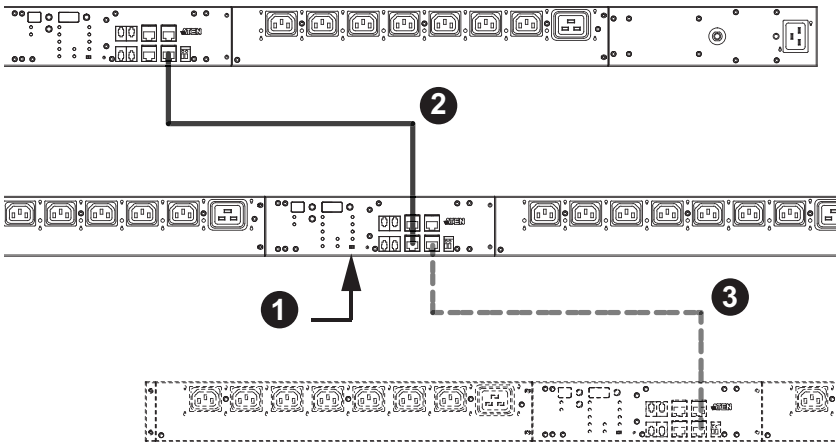
## Securing the Cables

For added safety, use ATEN Lok-U-Plug cable holders to secure the cables from your attached devices in place on the eco PDU unit. Secure the cable holders using the specially designed holes around the individual power outlets, as shown below:
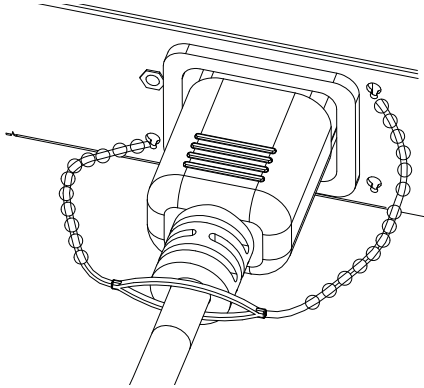


**Note:** 1. Cable holders are an optional accessory. See *Cable Holders*, page 8.

2. Use only the ATEN Lok-U-Plug cable holders that have been specifically designed to work with the eco PDU. Using any other kind of cable securing device could be highly dangerous.

## Securing the Sensors

Connect the sensors to the eco PDU's front panel sensor ports and secure them using sensor mounts, tie wraps, and adhesive cable tie holders. If you use a tie wrap to secure the sensor, tighten the tie wrap over the recessed channel on the sensor, as shown in the following diagram:
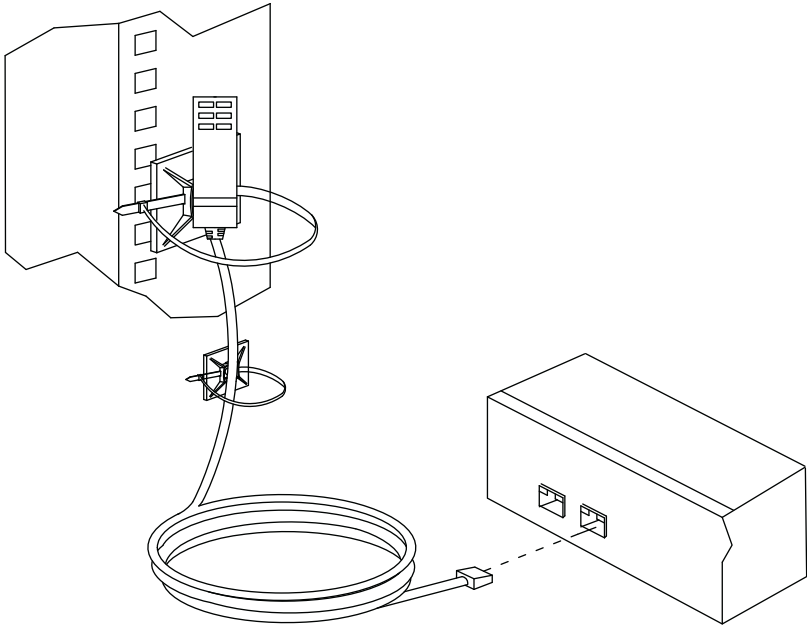


**Note:** 1. The sensors shown in the above diagram are for reference purposes only. The sensors for the eco PDU may look slightly different.

2. Depending on the model and type of sensor, sensor mounts, tie wraps, and adhesive cable tie holders may or may not be provided in the package.

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# Chapter 3
# Basic Operation and First Time Setup

## Operation Methods

NRGence eco PDU models provide three methods to access and manage your installation: Browser, eco Sensors (eco PDU Management Software), and SNMP.

**Note:** The following sections of this chapter contain information concerning Browser operation. For eco Sensors operation, please reference the separate eco Sensors User Manual. The eco Sensors software and User Manual can be downloaded from the ATEN website.

### Browser

NRGence eco PDUs can be accessed and controlled via any supported Internet browser from any platform. See *First Time Setup*, page 24, and the following sections in this chapter, for full details.

### eco Sensors

All eco PDUs support eco Sensors (eco PDU Manager Software). NRGence eco Sensors provides you with an easy method for managing multiple devices, offering an intuitive and user-friendly Graphical User Interface that allows you to configure a PDU device and monitor power status of the equipment connected to it. NRGence eco Sensors can be downloaded from the ATEN website, along with a separate eco Sensors User Manual.

### SNMP

NRGence eco PDUs support any 3rd party V1, V2, V3 SNMP Manager Software. SNMP Management Information Database (MIB) files for the eco PDU device can be found on the software CD provided with the eco PDU package, or can be downloaded from the ATEN website.

# First Time Setup

Once the eco PDU installation has been cabled up, the next task the Administrator needs to perform involve configuring the network parameters, changing the default Super Administrator login settings, and adding users.

The easiest way to accomplish this is to log in over the Net with a browser.

---

**Note:** 1. Since this is the first time you are logging in, use the default Username: *administrator*; and the default Password: *password*. For security purposes we recommend changing them to something unique (see *Changing the Administrator Login*, page 26).

2. For remote methods of getting logged in to the network, see *IP Address Determination*, page 99.

---

After you successfully log in, the eco PDU Outlet Access/Connections page appears:



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**Note:** Operation details are discussed in *Outlet Access*, page 30, in the next chapter. For further setup information, continue with this chapter

---

## Network Configuration

To set up the network, do the following:

1. Click the **Device Management** tab.

2. Open the **Network** page. A screen similar to the one below appears:



3. Fill in the fields according to the information provided under *Device Configuration*, page 49.

### Changing the Administrator Login

To change the default Administrator username and password, do the following:

1. Click the **User Management** tab.

   Once users have been added to the system, the User Management page displays a detailed list of users – with more information about them – in the large central panel:
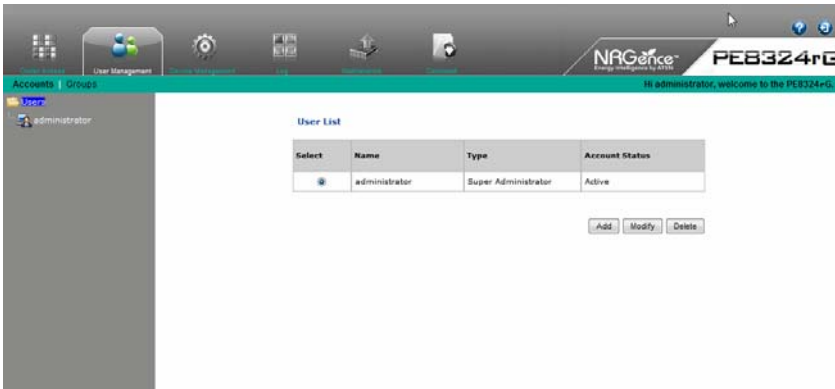


2. Select the **Administrator** in the sidebar and in the **General** section, reset the name and password fields to something unique, then click **Save** (at the bottom of the page.)

---

**Note:** If you forget the Administrator's name or password, short the mainboard jumper to restore the default Administrator account. See see *PE7324rB/rJ/ PE8324rB/rJ / PE9324rB/rJ*, page 104 in the Appendix for full details.

---

## Moving On

After setting up the network and changing the default Administrator username and password, you can proceed to other administration activities – including adding users. This is covered in the next chapter.

# Logging In

## Logging In

The eco PDU can be accessed via a supported Internet browser from any platform.

**Note:** Browsers must support SSL 128 bit encryption.

To access the eco PDU do the following:

1. Open your browser and specify the IP address of the eco PDU you want to access in the browser's URL location bar.

   **Note:** You can get the IP address from the eco PDU administrator, or see *IP Address Determination*, page 99, for information about setting it up yourself.

2. If a Security Alert dialog box appears, accept the certificate – it can be trusted. The Login page appears:



3. Provide a valid Username and Password (set by the eco PDU administrator).

4. Then Click **Login** to bring up the browser Main Page.

# The eco PDU Main Page

After you have successfully logged in, the eco PDU Main Page comes up with the Outlet Access *Connections* page displayed:



**Note:** The screen depicts an Administrator's page. Depending on a user's type and permissions, and your PE model, not all of these elements appear.

## Page Components

The web page screen components are described in the table, below:

| No. | Item | Description |
|---|---|---|
| 1 | Tab Bar | The tab bar contains the eco PDU's main operation categories. The items that appear in the tab bar are determined by the user's type, and the authorization options that were selected when the user's account was created. |
| 2 | Menu Bar | The menu bar contains operational sub-categories that pertain to the item selected in the tab bar. The items that appear in the menu bar are determined by the user's type, and the authorization options that were selected when the user's account was created. |
| 3 | Sidebar | The Sidebar provides a tree view listing of outlets that relate to the various tab bar and menu bar selections. |
| 4 | Help | Connects to on-line help at the ATEN website for the device's configuration and operation. |
| 5 | Logout | Click this button to log out of your eco PDU session. |
| 6 | Interactive Display Panel | This is your main work area. The screens that appear reflect your menu choices and Sidebar node selection. |

The station level Configuration page has two tabs: *General* and *Groups*, as described in the chapters that follow.

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# Outlet Access

## Outlet Access

### Connections

When you log in to the eco PDU, the interface opens with its default selection of the *Outlet Access* tab; and the *Connections* menu. The contents of the **PDU Status**, **Bank Status,** and **Outlet Status** sections are displayed in the main panel.



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**Note:** Only enabled eco PDU models will display the Bank Status and/or Outlet Status submenu section.

---

The Connections pages provide status and settings information for stations, outlets and outlet groups. The pages that come up in the main panel differ, depending on which item is selected in the sidebar.

## Station Level

When a station is selected in the sidebar, the main panel page has three tabs: Outlets, General, and Groups:

| Outlets | General | Groups |
|---------|---------|--------|

### Outlets – Device / Bank Status

These sections are view only and provide power status and usage information. To configure the settings, select the *Configuration* tab on the menu bar. See *Click to put a checkmark in the checkbox of the outlets you want to add to the group, then click Save.*, page 43, for details.

### Outlets – Outlet Status

If your eco PDU models supports outlet level power management, manual On/ Off/Reboot switching can be performed on this page.

**Outlet Status**

| Outlet | Outlet Name | Outlet Status | Voltage | Current | Power | Power Dissipation |
|--------|-------------|---------------|---------|---------|-------|-------------------|
| [01] | | Pending ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [02] | | OFF ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [03] | | ON ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [04] | | ON ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [05] | | ON ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [06] | | ON ☐ Reboot | 0 V | 0.00 A | 0 W | 0.00 kWH |
| [07] | | | 0 V | 0.00 A | 0 W | 0.00 kWH |

■ **On / Off / Reboot**

You can manually turn the outlet On and Off from this page by clicking on the outlet icon or enabling the radio button. To Reboot the outlet, enable the Reboot checkbox and click on Save (located at the bottom of the page).

**Note:** The icon flashes yellow while a power status change is pending.

### General

The station's *General* tab shows the setting configuration. This page only displays information. Setting changes cannot be made here. To configure the settings, select Configuration at the far right of the menu bar and see *Click to put a checkmark in the checkbox of the outlets you want to add to the group, then click Save.*, page 43, for details.

### Groups

The station's *Groups* tab lists the names of the outlet groups that have been created. This page only displays information. To configure the settings, select Configuration at the far right of the menu bar. See *Click to put a checkmark in the checkbox of the outlets you want to add to the group, then click Save.*, page 43, for details.

## Outlet Level

When an outlet is selected in the Sidebar, the main panel tabs change to:
*General*, *Configuration*, and *Scheduling*:



### General

The outlet's *General* page provides information regarding the outlet's name
and power status:
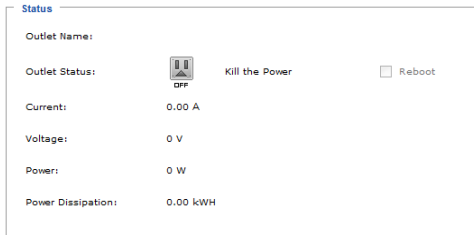


You can manually turn the outlet On and Off from this page by clicking the
power outlet icon (see *On / Off / Reboot*, page 32 for details).

### Configuration

The outlet's *Configuration* page summarizes the various configuration settings
that have been made for the outlet. The *Configuration* section only displays
information. Setting changes cannot be made here. To configure the settings,
select Configuration at the far right of the menu bar. See *Click to put a
checkmark in the checkbox of the outlets you want to add to the group, then
click Save.*, page 43 for details.

### Server Diagnosis

The *Server Diagnosis* section allows you to use an ICMP ping command to
check if the outlet is functioning properly. This function is detailed in *Server
Diagnosis*, page 46.

## Scheduling

The outlet's *Scheduling* page shows the date and time schedule settings for automatic power control of the outlet:



To configure the schedule, select *Configuration* at the far right of the menu bar. See *After you have made your schedule settings, click Add. The schedule is summarized in the list at the bottom of the panel.*, page 48 for details

## Outlet Group Level

When an outlet group is selected in the Sidebar, the main panel tabs change to *General*, and *Schedule*.



Each of the tabs is described below.

### General

The outlet group's *General* page provides information regarding the group's name, the outlets that belong to the group, and the power status of the outlets:
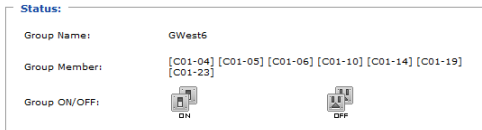


You can manually turn the outlets On and Off from this page by clicking the power outlet icon (see *On / Off / Reboot*, page 32, for details).

**Note:** All of the outlets in the group turn On or Off together.

### Schedule

The outlet group's *Schedule* page shows the date and time schedule settings for automatic power control of the outlet group. This page is similar to the Outlet Schedule page discussed in the previous section.

## User Preferences

The User Preferences page allows users to set up their own, individual, working environments. The eco PDU stores a separate configuration record for each user profile, and sets up the working configuration according to the Username that was keyed into the Login dialog box.



Make your settings changes according to the information given in the following table:

| Setting | Function |
| --- | --- |
| Language | Selects the language that the interface displays in. Drop down the list of available languages to choose the one you want. |
| Logout Timeout | If there is no user input for the amount of time set with this function, the user is automatically logged out. A login is necessary before the eco PDU can be accessed again. Key in a value from 0–180 minutes.<br>**Note:** A setting of 0 (zero) disables this function, in which case users are never automatically logged out, no matter how much time passes. |
| Beeper | If this is enabled (there is a check in the checkbox), the beeper sounds whenever any of the following conditions occur: the eco PDU is powered On; whenever an environment alarm is triggered; whenever a device level alarm is triggered; whenever an outlet level alarm is triggered.<br>**Note:** This is the master alarm setting. If it is not enabled, no alarms will sound – even if they are enabled on the Station Level configuration pages. (See page 41.) |
| Welcome Message | If this is enabled, a welcome message appears at the right side of the menu bar. |
| Password Fields | To change the user password, first key the old password into the *Old Password* input box, then key the new password into the *New Password* and *Confirm Password* input boxes. |

## Sessions

The *Session* page shows all of the users currently logged into the eco PDU, and provides information about each of their sessions.

| Select | User Name | IP | Login Time | Client | User Type |
|---|---|---|---|---|---|
| ◉ | administrator | 10.3.52.124 | 2012/08/07 14:34:26 | HTTPS | Super Admin |
| ○ | administrator | 10.3.41.141 | 2012/08/07 15:03:09 | HTTPS | Super Admin |

End Session

◆ The information under the *IP* heading indicates the IP address that the user is logged in from.

◆ The information under the *Client* heading indicates that the user has logged in via a browser connection (HTTPS).

◆ Administrator have the option of forcing user logouts by selecting the user and clicking **End Session**.

## Access

The *Access* page provides a way to assign permissions to users and groups at both the station level and individual power outlet levels. The items available differ depending on whether a station or an outlet is selected in the Sidebar.

### Station Level

When a station is selected in the Sidebar, a page similar to the one below, displays in the main panel, with users and user groups listed in the left column.:

**Access Information**

| Name | User Management | Device Management | Log | Maintenance | Java Client | Modem |
|---|---|---|---|---|---|---|
| administrator | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Save

◆ A check mark indicates the user or user group is authorized to perform the task indicated in the column head.

◆ The permissions are the same ones assigned under user accounts. See *Permissions*, page 51 for details.

When you have made your settings on this page, click **Save**.

## Outlet Level

When an outlet is selected in the Sidebar, a page similar to the one below, comes up in the main panel:

**Access Information**

| Name | Access | Outlet Configuration |
|------|--------|---------------------|
| administrator | ☑ | ☑ |

Save

Users and groups are listed alphabetically in the left column.

◆ A check mark under the *Access* column, indicates the user or group is authorized to access and power control the selected outlet.

◆ A check mark under the *Outlet Configuration* column, indicates the user or group is authorized to configure the selected outlet's settings (see *Configuration*, page 40).

When you have made your settings on this page, click **Save**.

## Configuration

The *Configuration* page is used to configure the threshold settings of the eco PDU at the device, bank and individual power outlet level. The items available differ depending on your eco PDU model and whether a station or outlet is selected in the sidebar.

### Station Level Configuration

When a station is selected in the sidebar, a page similar to the one below displays in the main panel.



The station level Configuration page has two tabs: *General* and *Groups*, as described in the sections that follow.

**General**

When the *Configuration* page opens, the station's *General* page is selected. This page allows you to set up a power management configuration for the device as a whole. The meanings of the field headings are given in the following table:

| Heading | Meaning |
|---------|---------|
| Device Name | To make things more convenient on a multi-station installation, each station can be given a distinctive name. To name a station key in the name of your choice - up to 15 letters and numbers. |
| Load Alarm | A checkmark in the check box disables an alarm from being triggered when the device's current load falls outside of its specified range. |
| Environment Alarm | A checkmark in the check box disables an alarm from being triggered when the device's environment sensor readings fall outside the fluctuation threshold settings. See below. |
| Device Threshold Settings | These fields are used to set the maximum, minimum, and fluctuation threshold settings. If a range falls below the minimum setting, or exceeds the maximum setting an alarm is triggered. <br><br> In order to keep alarms from being constantly triggered due to slight fluctuations at the threshold points, you can set a fluctuation range that must be exceeded when a threshold is crossed in order for the alarm to be triggered. |
| Temperature Unit | Click a radio button to choose the temperature unit for the temperature sensor. |
| Bank Threshold Settings | These fields are used to set the maximum, minimum, and fluctuation threshold settings for the Banks. These operate the same way as the Device Threshold Settings, above. |

## Groups

Outlet groups enable power configuration and control actions to be carried out on a selected group of outlets at the same time, rather than repeatedly performing the same action on each individual one. The *Groups* page lists the outlet groups that have already been configured, and shows which outlets are included in the group.
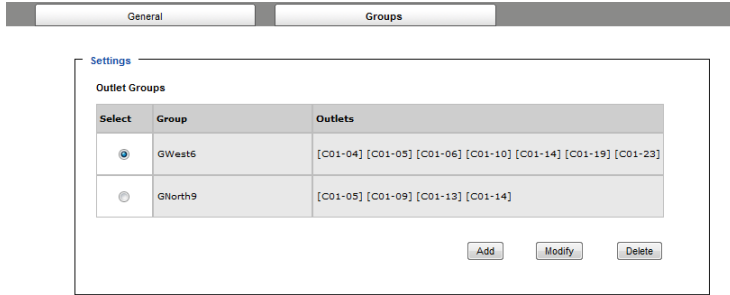


**Note:** In the Outlet column the outlets are displayed as [Station ID-Outlet Number]. For example, [C01-05] refers to outlet number 5 belonging to PE8324 station number 01.

This page is also used to create new outlet groups, as well as to modify or delete existing ones.

◆ To **Create** an outlet group, do the following:

1. Click **Add**.

2. In the page that comes up, first key in a name that will help you identify the group, then click the plus sign (+) in front of the device name to show the list of outlets.
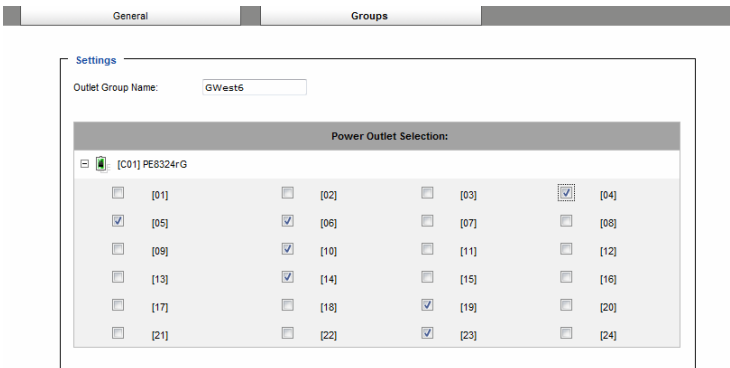
3. Click to put a checkmark in the checkbox of the outlets you want to add to the group, then click **Save**.

   When you return to the Group page, your new group is included in the list

   > **Note:** The group also shows up as a device in the Sidebar, and this page can be accessed by clicking on its icon in the Sidebar.

- To **Modify** an outlet group, select it in the list, then click **Modify**. The screen that comes up is the same one that appears when you click **Add**.

  You can rename the group as well as add and remove outlets. When you are done modifying the group click **Save**.

- To **Delete** an outlet group, select it in the list, then click **Delete**.

## Outlet Level Configuration

The configuration settings for many eco PDU models can be specified on an outlet by outlet basis. When an outlet is selected in the Configuration page Sidebar, the main panel displays a page with two tabs: *Configuration*, and *Schedule*, as described in the sections that follow.

### Configuration

The *Configuration* tab page, similar to the one below, is the default that appears in the main panel.



This page lets you set up the power management configuration for the selected outlet. The meanings of the field headings are given in the table on the following two pages:

| Heading | Meaning |
|---------|---------|
| Outlet Name | Each outlet can be given a distinctive name. The maximum number of characters is 15. |
| Alarm | A checkmark in the check box disables an alarm from being triggered when the outlet's readings fall outside the fluctuation threshold settings. |
| Confirmation Required | If this option is enabled (there is a check in the checkbox), a dialog box comes up asking you to confirm a power operation before it is performed. If it is disabled (there is no check in the checkbox), the operation is performed without confirmation. |

| Heading | Meaning |
|---|---|
| Power On Delay | Sets the amount of time the eco PDU waits after the Power Button is clicked, before it turns on the computer attached to the corresponding outlet. |
| | **Note:** The default delay time is 0 seconds; the maximum is 999 seconds. When a series of outlets are scheduled to be powered up, they turn on in sequence with a default delay of 10 milliseconds between each outlet. |
| Power Off Delay | Sets the amount of time the eco PDU waits after the Power Button is clicked, before it turns off the computer attached to the corresponding outlet. |
| | For the *System after AC Back* option (see below), after the delay time expires, the eco PDU waits another fifteen seconds, then shuts the computer down. |
| | The default delay time is 15 seconds. The maximum delay time is 999 seconds. |
| Shutdown Method | There are three choices for the Shutdown method. Drop down the list to select a choice. The meaning of each choice is described, below: |
| | **Wake on LAN:** This is a Safe Shutdown and Restart option. If this is selected, when an Outlet is turned Off, the eco PDU first sends a message to the computer telling it to prepare for a shutdown; it then waits for the amount time set in the *Power Off Delay field* to give the OS time to close down before the computer is powered down to standby mode. |
| | Likewise, when the Outlet is turned On, the eco PDU waits for the amount time set in the *Power On Delay* field, then sends an Ethernet message to the computer connected to the Outlet telling the computer to turn itself On. |
| | **Note:** For Safe Shutdown and Restart, the computer must be running Windows (Windows 98 or higher), and the *Safe Shutdown* program (available by download from our website), must be installed and running on the computer. |
| | **System after AC Back:** This is a Safe Shutdown and Restart option. If this is selected, when an Outlet is turned Off, the eco PDU first sends a message to the computer telling it to prepare for a shutdown; it then waits for the amount time set in the *Power Off Delay* field to give the OS time to close down before the computer is powered down. |
| | When the Outlet is turned On, the eco PDU waits for the amount time set in the *Power On Delay* field, then sends power to the server. When the server receives the power, it turns itself on. |
| | **Note:** For Safe Shutdown and Reboot, the computer must be running Windows (Windows 98 or higher), and the *Safe Shutdown* program (available by download from our website), must be installed and running on the computer. |
| | **Kill the Power:** If this option is selected, the eco PDU waits for the amount time set in the *Power Off Delay* field, and then turns the Outlet's power Off. Turning the power off performs a cold (non-safe) shutdown. |
| MAC Address | In order to use either of the Safe Shutdown and Restart methods the MAC address of the computer connected to the outlet must be filled in here. |

| Heading | Meaning |
|---|---|
| Threshold Settings | These fields are used to set the maximum, minimum, and fluctuation threshold settings. If a range falls below the minimum setting, or exceeds the maximum setting an alarm is triggered. |
| | In order to keep alarms from being constantly triggered due to slight fluctuations at the threshold points, you can set a fluctuation range that must be exceeded when a threshold is crossed in order for the alarm to be triggered. |

When you have finished making your configuration settings, click **Save**.

## Server Diagnosis

The *Server Diagnosis* section allows you to use an ICMP ping command to check if the outlet is functioning properly.



This function is detailed in the following table:

| Enable | Put a check in the checkbox to enable this function. |
|---|---|
| Ping Address | Enter the IP address of the outlet to be pinged in this field. |
| Interval | This field sets how often the specified outlet is pinged, in second intervals. Enter a value between 1 and 255. |
| Fail Count | This field sets how many times the outlet is allowed to fail to respond to the ping before an action is taken (see below). Enter a value between 1 and 99. |
| Action | This field sets what action is taken if the outlet fails to respond to a specified number of pings. Select one of the following actions from the drop-down menu: |
| | **Send email:** This sends an email using the SMTP server setting. For this function to work, you must also enable reports from the SMTP server. See *SMTP Settings*, page 66 for details. |
| | **No action:** Select this option to do nothing if the specified device fails to respond. |

## Schedule

Clicking the *Schedule* tab brings up a page that lets you set up a scheduled power On/Off configuration for the selected outlet:



The meanings of the field headings are given in the table, below:

| Heading | Meaning |
|---|---|
| Routine Type | Drop down the list to select whether the scheduled power configuration should take place just Once, or on a Daily, Weekly, or Monthly basis. |
| Week Day | This field only becomes active if you choose *Weekly* as the routine type. If you choose Weekly, drop down the list to choose which day of the week you want the power management routine to take place on. |
| Date | This field only becomes active if you choose *Monthly* as the routine type. If you choose Monthly, drop down the list to choose which day of the month you want the power management routine to take place on. |
| Start Date | If you want to limit the power management routine to a particular time period, either click the calendar icon to select the date that the routine will start at, or key in a start date using the YYYY-MM-DD format |
| End Date | If you want to limit the power management routine to a particular time period, either click the calendar icon to select the date that the routine will end at, or key in an end date using the YYYY-MM-DD format |

| Heading | Meaning |
|---------|---------|
| Shutdown Time | Key in the time of day you want the shutdown to take place using the HH:MM format. |
| | If you want to temporarily suspend this function without deleting the entry, click to put a check in the *Disable* checkbox at the right of this field. You can reinstate the function by unchecking the checkbox. |
| Restart Time | Key in the time of day you want the restart to take place using the HH:MM format. |
| | If you want to temporarily suspend this function without deleting the entry, click to put a check in the *Disable* checkbox at the right of this field. You can reinstate the function by unchecking the checkbox. |
| Every | For added flexibility, you can use this field to refine the Daily, Weekly, and Monthly routines. For example, if you chose *Daily* as your routine type, you could have the routine take place every 3 days (instead of every day), by keying a 3 in this field. |

After you have made your schedule settings, click **Add**. The schedule is summarized in the list at the bottom of the panel.

To remove the outlet's schedule, select it in the list and click **Delete**.

# User Management

## Overview

When you select the *User Management* tab the screen comes up with *Accounts* selected in the Menu bar, and the *User List* displayed in the main panel:
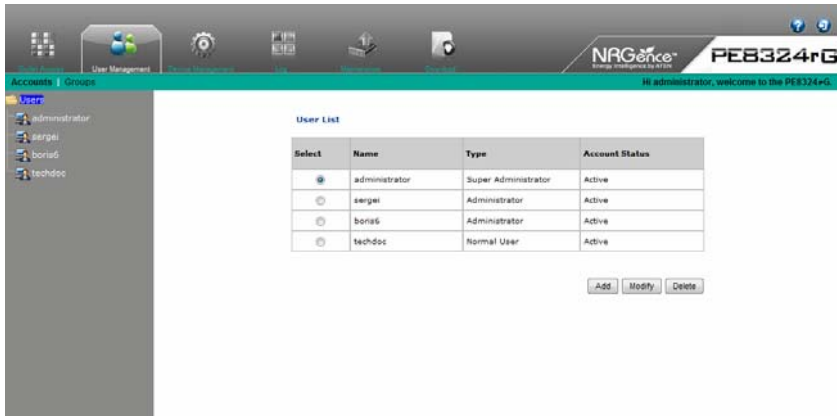


The Accounts page has two menu items: *Accounts*, for managing individual users; and *Groups*, for managing user groups.

---

**Note:** There is a pre-installed super administrator account. It can be used to set up the device and to begin creating users and groups. The Username for this account is *administrator*; the password is *password*. For security purposes, we strongly recommend changing these to something unique. See *Modifying User Accounts*, page 53 for details.

---

# Users

## Adding Users

To add a user, do the following:

1.  Select *Users* in the Sidebar.

2.  Click **Add** at the bottom of the User List in the main panel. The page opens with three tabs at the top: *User*, *Groups*, and *Devices*. The User tab is selected by default:



3.  Enter the required information in the appropriate fields. A description of each of the fields is given in the table below:

| Field | Description |
|---|---|
| Username | From 1 to16 characters are allowed depending on the Account Policy settings. See *Account Policy*, page 75. |
| Password | From 1 to16 characters are allowed depending on the Account Policy settings. See *Account Policy*, page 75. |
| Confirm Password | To be sure there is no mistake in the password, you are asked to enter it again. The two entries must match. |

| Field | Description |
|---|---|
| User Type | There are three categories: Super Administrator, Administrator and User. There is no limitation on the number of accounts that can be created in each category. |
| | ◆ The super administrator is responsible for the overall installation configuration and maintenance; user management; and device and outlet assignments. |
| | ◆ Administrators have User Management, Device Management, and Maintenance privileges, as well as being able to access specified devices and outlets. |
| | ◆ Users can access the devices and outlets assigned to them by the super administrator or administrator. Additional privileges can be assigned to them by the super administrator or administrator (see *Permissions*, below). |
| Permissions | ◆ Super administrators automatically have all permissions. |
| | ◆ Administrators automatically have User Management, Device Management, Java Client, and Maintenance permissions. They can be given additional permissions by checking the appropriate boxes. |
| | ◆ Ordinary users Java Client automatic privileges only. Their permissions are set individually by checking the appropriate boxes. |
| |     ◆ Checking User Management, Device Management, Log, and/or Maintenance gives the user access to the respective tabs (on the tab bar), allowing the user to set and change the configuration parameters for the checked items. |
| |     ◆ *Modem* allows a user to access the eco PDU using a modem connection. |

| Field | Description |
|-------|-------------|
| Status | Status allows you to control the user's account and access to the installation, as follows: |
| | ◆ *Disable Account* lets you suspend a user's account without actually deleting it, so that it can be easily reinstated in the future. |
| | ◆ If you don't want to limit the time scope of the account, select *Account never expires*; if you want to limit the amount of time that the account remains in effect, select *Account expires on*, and key in the expiration date. |
| | ◆ To require a user to change his password at the next logon, select *User must change password at next logon*. This can be used by the administrator to give the user a temporary password to log in for the first time, and then let the user set the password of his choice for future logins. |
| | ◆ To make a password permanent, so that the user cannot change it to something else, select *User cannot change password*. |
| | ◆ For security purposes, administrators may want users to change their passwords from time to time. |
| | ◆ If not, select *Password never expires*. This allows users to keep their current passwords for as long as they like. |
| | ◆ If so, select *Password expires after*, and key in the number of days allowed before the password expires. Once the time is up, a new password must be set. |

4. When your selections have been made click **Save**.

5. When the *Operation Succeeded* message appears, click **OK**.

   You return to the main screen. The new user appears in the Sidebar *Users* tree and in the *User List* of the main panel.

   The large main panel shows the user's name; the description that was given when the account was created; and whether the account is currently active or has been disabled.

## Modifying User Accounts

To modify a user account, do the following:

1.  In the Sidebar *User* tree, click the user's name

    – or –

    In the main panel, select the user's name, then click **Modify**.

2.  In the *User* page that comes up is the same as the one for adding users (see page 50). Make your changes, then click **Save**.

## Deleting User Accounts

To delete a user account do the following:

1.  In the main panel, select the user's name, then click **Delete**.

2.  Click **OK**.

## Moving On

From here, we move on to the Groups menu entry. The Groups tab page that is part of the Accounts menu is discussed under *Users and Groups*, page 57. The Devices tab page is discussed under *Device Assignment*, page 61.

# Groups

Groups allow administrators to easily and efficiently manage users and devices. Since device access rights apply to anyone who is a member of the group, administrators need only set them once for the group, instead of having to set them for each user individually. Multiple groups can be defined to allow some users access to specific devices, while restricting other users from accessing them.

**Note:** This section refers to the Groups menu. The Groups tab that appears when the Accounts menu item is selected, is discussed on page 57.

## Creating Groups

To create a group, do the following:

1. Select *Groups* on the menu bar.

2. Select *User Groups* in the Sidebar.

3. Click **Add** at the bottom of the Group List in the main panel. The page opens with three tabs at the top: *Groups*, *Members*, and *Devices*. The Groups tab is selected by default:

4. Enter the required information in the appropriate fields. A description of each of the fields is given in the table below:

| Field | Description |
|---|---|
| Group Name | A maximum of 16 characters is allowed. |
| Permissions | Group permissions are set by checking the appropriate boxes, as follows:<br><br>◆ Checking User Management, Device Management, Log, and/or Maintenance gives all group members access to the respective tabs (on the tab bar), allowing the user to set and change the configuration parameters for the checked items.<br><br>◆ *Modem* allows a user to access the eco PDU using a modem connection. |
| Status | ◆ Checking Disable Group allows the administrator to suspend a group's authorization without having to delete the group. This way, the group can be easily reinstated without having to create it all over again – simply by unchecking the box.<br><br>◆ If administrators only want the group to exist for a certain period of time, they can click the *Group expires on* radio button and then specify and expiration date (YYYY-MM-DD). The default setting is *Group never expires*. |

5. When your selections have been made click **Save**.

6. When the *Operation Succeeded* message appears, click **OK**.

   You return to the main screen. The new group appears in the Sidebar *User Groups* list and in the *Group List* of the main panel.

## Modifying Groups

To modify a group, do the following:

1. In the Sidebar *Group* tree, click the group's name

   – or –

   In the main panel, select the group's name, then click **Modify**.

2. The *Groups* page that comes up is the same as the one for adding groups (see page 54). Make your changes, then click **Save**.

## Deleting Groups

To delete a group do the following:

1. In the main panel, select the group's name, then click **Delete**.

2. Click **OK**.

# Users and Groups

There are two ways to assign users to – and remove users from – groups: from the Accounts menu; and from the Groups menu.

**Note:** 1. Before you can assign users to groups, you must first create them. See *Adding Users*, page 50 for details.

2. If a user has permissions in addition to the ones assigned to the group, the user keeps those permissions in addition to the group ones.

## Assigning Users to a Group From the Accounts Page

To assign a user to a group from the Accounts page, do the following:

1. In the Sidebar *Users* tree, click the user's name

   – or –

   In the main panel, select the user's name, then click **Modify**.

2. In the page that comes up, select the *Groups* tab. A page similar to the one below appears:



3. In the *Available* column, select the group that you want the user to be in.

4. Click the **Right Arrow** to put the group's name into the *Selected* column.

5. Repeat the above for any other groups that you want the user to be in.

6. Click **Save** when you are done.

## Removing Users From a Group From the Accounts Page

To remove a user from a group from the Accounts page, do the following:

1. In the Sidebar *Users* tree, click the user's name

   – or –

   In the main panel, select the user's name, then click **Modify**.

2. In the page that comes up, select the *Groups* tab. A screen, similar to the one below, appears:
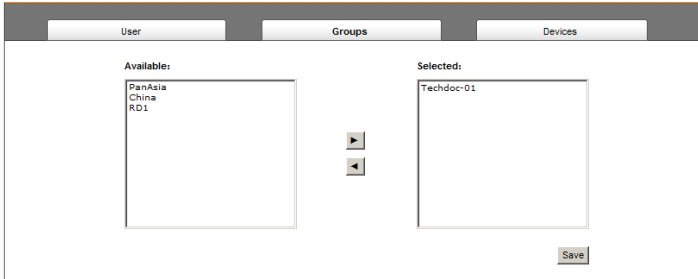


3. In the *Selected* column, select the group that you want to remove the user from.

4. Click the **Left Arrow** to remove the group's name from the *Selected* column. (It goes back into the *Available* column.)

5. Repeat the above for any other groups that you want to remove the user from.

6. Click **Save** when you are done.

## Assigning Users to a Group From the Groups Page

To assign a user to a group from the Groups page, do the following:

1. In the Sidebar *User Groups* tree, click the group's name

   – or –

   In the main panel, select the group's name, then click **Modify**.

2. In the page that comes up, select the *Members* tab. A screen, similar to the one below, appears:
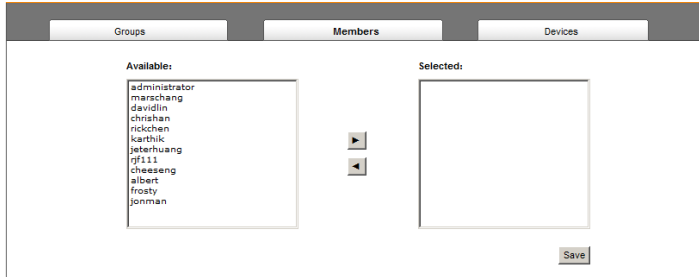


3. In the *Available* column, select the user that you want to be a member of the group.

4. Click the **Right Arrow** to put the user's name into the *Selected* column.

5. Repeat the above for any other users that you want to be members of the group.

6. Click **Save** when you are done.

## Removing Users From a Group From the Groups Page

To remove a user from a group from the Groups page, do the following:

1. In the Sidebar *User Groups* tree, click the group's name

   – or –

   In the main panel, select the group's name, then click **Modify**.

2. In the page that comes up, select the *Members* tab. A screen, similar to the one below, appears:
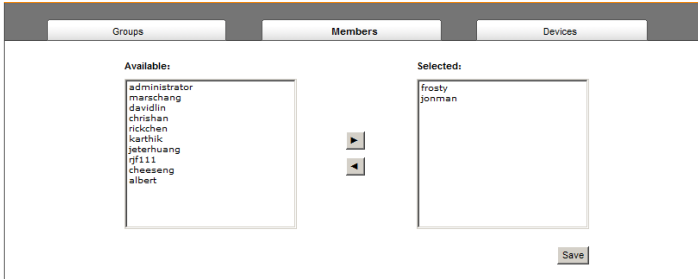


3. In the *Selected* column, select the user that you want to remove from the group.

4. Click the **Left Arrow** to remove the user's name from the *Selected* column. (It goes back into the *Available* column.)

5. Repeat the above for any other users that you want to remove from the group.

6. Click **Save** when you are done.

# Device Assignment

When a user logs in to the eco PDU, the interface comes up with the Outlet Access page displayed. All the outlets that the user is permitted to access are listed in the Sidebar at the left of the page. Access permissions for those outlets can be assigned on an outlet-by-outlet basis from the *Accounts* menu for individual users, or the Groups menu for user groups.

## Assigning Device Permissions From the Accounts Menu

To assign device permissions to a user from the Accounts menu, do the following:

1.  In the Sidebar *Users* tree, click the user's name

    – or –

    In the main panel, select the user's name, then click **Modify**.

2.  In the that comes up, select the *Devices* tab. A screen, similar to the one below, appears:
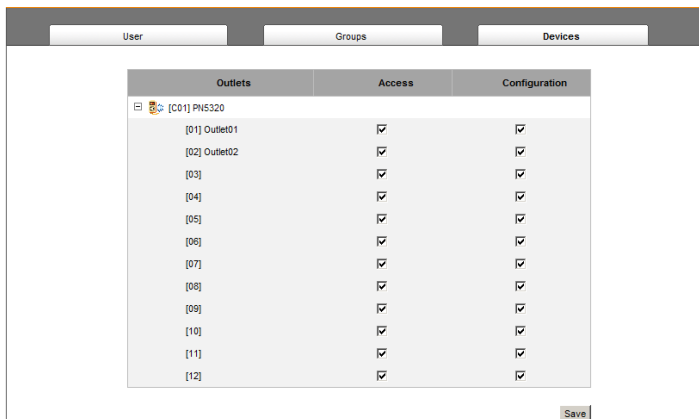


> **Note:** The page comes up with the outlets nested under the devices. Click the plus sign in front of a device's name to show the outlets.

*   Outlets are listed in the left hand column. Permissions can be set on an outlet-by-outlet basis.
*   The *Access* column is where device access rights are set.
*   The *Configuration* column enables/disables a user from making configuration changes to the outlet settings.

3. Under the *Access* column, click to permit or restrict the user's access to an outlet. A check mark ( √ ) indicates that the user has permission to access the outlet; a blank checkbox means that the user is denied permission to access the outlet.

4. Under the *Configuration* column, click to permit or restrict the user's ability to change the outlet's configuration settings. A check mark ( √ ) indicates that the user has permission to make changes to the outlet's configuration settings (see Chapter 7, *Device Management*); a blank checkbox means that the user is denied permission to make changes to the outlet's configuration settings.

5. In the confirmation popup that appears, click **OK**.

## Assigning Device Permissions From the Groups Page

To assign device permissions to a Group of users, do the following:

1. In the Sidebar *User Groups* tree, click the group's name

   – or –

   In the main panel, select the group's name, then click **Modify**.

2. In the *page* that comes up, select the *Devices* tab.

3. The screen that comes up is the same one that appears when assigning permissions from the Accounts page. Make your device assignments according to the information described under *Assigning Device Permissions From the Accounts Menu*, page 61.

   The only difference is that whatever settings you make apply to all members of the group instead of just one individual member.

# Device Management

## Device Management

The *Device Management* page allows administrators and users with device management permission to configure and control overall eco PDU operations.

### Device Configuration

This page presents information about the selected device, as described in the following sections:

#### General



| Item | Meaning |
|---|---|
| PDU Name | This field lets you give the device a unique name. Simply delete whatever is in the text box and key in the name of your choice. Click **Save** (located at the bottom of the page) to save the new name. |
| MAC Address | This item displays the eco PDU's MAC address. |
| Firmware Version | This item displays the current firmware version number. You can reference it to see if there are newer versions available on the ATEN website. |
| Rack Location Name | This field lets you give the rack location a unique name for easy reference. |

## Service Ports

As a security measure, if a firewall is being used, the Administrator can specify the port numbers that the firewall will allow. If a port other than the default is used, users must specify the port number as part of the IP address when they log in. If an invalid port number (or no port number) is specified, the eco PDU will not be found.

Select whether to allow only secure browser logins, as show below:

**Service Ports**

⊙ Only HTTPs ○ HTTP / HTTPs

HTTP: 80

HTTPs: 443

An explanation of the fields is given in the table below:

| Field | Explanation |
| --- | --- |
| HTTP | The port number for a browser login. The default is 80. |
| HTTPS | The port number for a secure browser login. The default is 443. |

**Note:** 1. Valid entries for all of the Service Ports are from 1–65535.

2. The service ports cannot have the same value. You must set a different value for each one.

3. If there is no firewall (on an Intranet, for example), it doesn't matter what these numbers are set to, since they have no effect.

## IPv4 Configuration

The PDU's IPv4 IP and DNS addresses (the traditional method of specifying IP addresses) can either be assigned dynamically (DHCP), or a fixed IP address can be specified.



- ◆ For dynamic IP address assignment, select the *Obtain IP address automatically* radio button. (This is the default setting.)

- ◆ To specify a fixed IP address, select the *Set IP address manually* radio button and fill in the IP address with values appropriate for your network.

- ◆ For automatic DNS Server address assignment, select the *Obtain DNS Server address automatically* radio button.

- ◆ To specify the DNS Server address manually, select the *Set DNS server address manually* radio button, and fill in the addresses for the Preferred and Alternate DNS servers with values appropriate for your network.

**Note:** 1. If you choose *Obtain IP address automatically*, when the device starts up it waits to get its IP address from the DHCP server. If it hasn't obtained the address after one minute, it automatically reverts to its factory default IP address (192.168.0.60.)

2. If the device is on a network that uses DHCP to assign network addresses, and you need to ascertain its IP address, see *IP Address Determination*, page 99, for information.

3. Specifying the Alternate DNS Server address is optional.

## Event Notification

The Event Notification section is divided into three sections: SMTP Settings; SNMP Trap Receivers; and Syslog Server. Each section is described below.

**Note:** SMTP communications are supported on Port 25.

◆ **SMTP Settings**

**Event Notification**

**SMTP Server**

☐ Enable report from the following SMTP Server

SMTP Server : [_____]

☐ My server requires authentication

Account Name : [_____]

Password : [_____]

From : [_____]

To : [_____]

To have the eco PDU device email reports from the SMTP server to you, do the following:

1. Enable the *Enable report from the following SMTP server*, and key in the IP address of your SMTP server.

2. If your server requires authentication, put a check in the *My server requires authentication* checkbox.

3. Key in the appropriate account information in the *Account Name*, *Password*, and *From* fields.

   **Note:** Only one email address is allowed in the *From* fields, and it cannot exceed 64 characters.)

4. Key in the email address (addresses) of where you want the event reports sent to in the *To* field.

   **Note:** If you are sending the report to more than one email address, separate the addresses with a semicolon or comma, depending on the specified mail server. The total cannot exceed 256 characters.

◆ **SNMP Trap Receivers**



Up to four SNMP management stations can be specified. If you want to use SNMP trap notifications, do the following:

1. Check *Enable SNMP Trap*.

2. Select which version of SNMP you want to use.

3. Key in the IP address(es) and the service port number(s) of the computer(s) to be notified of SNMP trap events. The valid port range is 1–65535. The default port number is 162.

   **Note:** Make sure that the port number you specify here matches the port number used by the SNMP receiver computer.

4. Key in the community value(s) if required for the SNMP version.

5. Key in the auth/privacy password(s) that correspond to each of the stations.

## Syslog Server

**Syslog Server**

☐ Enable Syslog Server

Server
IP :  [0.0.0.0]

Service
Port :  [0]

To record all the events that take place on eco PDU devices and write them to the eco PDU Syslog server, do the following:

1. Check **Enable Syslog Server**.

2. Key in the IP address and the port number of the Syslog server. The valid port range is 1-65535. The default port number is 514.

## Date/Time

The Date/Time dialog page sets the eco PDU time parameters:

Set the parameters according to the information described below.

### Time Zone

◆ To establish the time zone that the eco PDU is located in, drop down the *Time Zone* list and choose the city that most closely corresponds to where it is at.

◆ If your country or region employs Daylight Saving Time (Summer Time), check the corresponding checkbox.

## Manual Input

Use this section to specify the eco PDU's date and time manually.

◆ Click the calendar icon and click the calendar entry for the date.

◆ Key the time into the Time field, using the HH:MM:SS (hours, minutes, seconds) format.

---

**Note:** This section is only enabled when *auto adjustment* (in the *Network Time* section) is disabled (the checkbox is unchecked).

---

As an alternative to specifying the date and time by entering them into the date and time fields, you can click to put a check in the *Sync with PC* checkbox, in which case the eco PDU will take its date and time settings from the locally connected PC.

## Network Time

To have the time automatically synchronized to a network time server, do the following:

1. Check the *Enable auto adjustment* checkbox.

2. Drop down the time server list to select your preferred time server

   – or –

   Check the *Preferred custom server IP* checkbox, and key in the IP address of the time server of your choice.

3. If you want to configure an alternate time server, check the *Alternate time server* checkbox, and repeat step 2 for the alternate time server entries.

4. Key in your choice for the number of days between synchronization procedures.

## Finishing Up

When you have finished making your settings on this page, click **Save**.

After you have saved your changes, if you want to synchronize immediately, click **Adjust Time Now**.

# Security

The Security page controls access to the eco PDU device.

## Login String

The *Login String* entry field is used to specify a login string (in addition to the IP address) that users must include when accessing the eco PDU device with a browser. For example:

        192.168.0.126/abcdefg

◆ The following characters are allowed:
  0–9 a–z A–Z ~ ! @ $ ^ & * ( ) _ + ' - = [ ] { } ; ' < > , . |

◆ The following characters are not allowed:

  ◆ % " : / ? # \ [Space]

  ◆ Compound characters (É Ç ñ ... etc.)

---

**Note:** 1. There must be a forward slash between the IP address and the string.

2. If no login string is specified here, anyone will be able to access the eco PDU login page using the IP address alone. This makes your installation less secure.

---

For security purposes, we recommend that you change this string occasionally.

## IP and MAC Filtering

If any filters have been configured, they appear in the IP Filter and/or MAC Filter list boxes.

IP and MAC Filters control access to the eco PDU based on the IP and/or MAC addresses of the client computers attempting to connect. A maximum of 100 IP filters and 100 MAC filters are allowed.

To enable IP and/or MAC filtering, click to put a check mark in the *IP Filter Enable* and/or *MAC Filter Enable* checkbox.

◆ If the include button is checked, all the addresses within the filter range are allowed access; all other addresses are denied access.

◆ If the exclude button is checked, all the addresses within the filter range are denied access; all other addresses are allowed access.

**Adding Filters**

To add an IP filter, do the following:

1.  Click **Add**. A dialog box similar to the one below appears:

2.  Specify the filter address in the dialog box (for example, 192.168.0.200), then click **OK**.

    A second dialog box, similar to the one below, appears:

3.  To filter a single IP address, key in the same address as the start IP. To filter a continuous range of addresses, key in the end number of the range (for example, 192.168.0.225).

4.  After filling in the address, click **OK**.

Repeat these steps for any additional IP addresses you want to filter.

To add a MAC filter, do the following:

1.  Click **Add**. A dialog box similar to the one below appears:

2. Specify the MAC address in the dialog box (for example, 001074670000), then click **OK**.

Repeat these steps for any additional MAC addresses you want to filter.

### IP Filter / MAC Filter Conflict

If there is a conflict between an IP filter and a MAC filter – for example, where a computer's IP address is allowed by the IP filter but it's MAC address is excluded by the MAC filter – then that computer's access is blocked.

In other words, if either filter blocks a computer, then the computer is blocked, no matter what the other filter is set to.

### Modifying Filters

To modify a filter, select it in the IP Filter or MAC Filter list box and click **Modify**. The Modify dialog box is similar to the Add dialog box. When it comes up, simply delete the old address(es) and replace it with the new one(s).

### Deleting Filters

To delete a filter, select it in the IP Filter or MAC Filter list box and click **Delete**.

## Account Policy

The Account Policy section governs policies in regard to usernames and passwords.



Check a policy and enter the required information in the appropriate fields.

| Item | Description |
|---|---|
| Minimum Username Length | Sets the minimum number of characters required for a username. Acceptable values are from 1–16. |
| Minimum Password Length | Sets the minimum number of characters required for a password. Acceptable values are from 1–16. |
| Password Must Contain At Least | Checking any of these items requires users to include at least one of the specified items in their password.<br>**Note:** This policy does not affect existing user accounts. Only new user accounts created after this policy has been enabled, and users required to change their passwords are affected. |
| Disable Duplicate Login | Check this to prevent users from logging in with the same account at the same time. |

# Login String / IP Filter / Mac Filter

**Login String/IP Filter**

Login String :

☐ IP Filter Enable    ⊙ Include    ○ Exclude

[Add]
[Modify]
[Delete]

☐ MAC Filter Enable    ⊙ Include    ○ Exclude

[Add]
[Modify]
[Delete]

■ **Login String**

The *Login String* entry field is used to specify a login string (in addition to the IP address) that users must include when accessing the eco PDU device with a browser. For example:

        192.168.0.126/abcdefg

- ◆ The following characters are allowed:

    0–9 a–z A–Z ~ ! @ $ * ( ) _ ' ,

- ◆ The following characters are not allowed:

    & ^ { } ' ' < > | " % " : / ? # \ [Space] + - = [ ] ;

    Compound characters (É Ç ñ ... etc.)

**Note:** 1. There must be a forward slash between the IP address and the string.

2. If no login string is specified here, anyone will be able to access the eco PDU device login page using the IP address alone. This makes your installation less secure.

For security purposes, we recommend that you change this string occasionally.

### ■ **IP Filter / MAC Filter**

If any filters have been configured, they appear in the IP Filter and/or MAC Filter list boxes.

IP and MAC Filters control access to the eco PDU based on the IP and/or MAC addresses of the client computers attempting to connect. A maximum of 5 IP filters and 5 MAC filters are allowed.
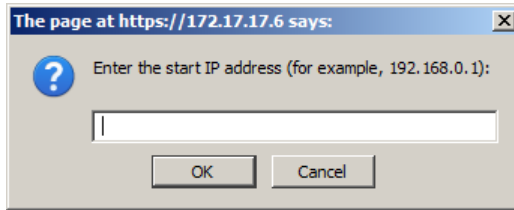
To enable IP and/or MAC filtering, click to put a check mark in the *IP Filter Enable* and/or *MAC Filter Enable* checkbox.

◆ If the include button is checked, all the addresses within the filter range are allowed access; all other addresses are denied access.

◆ If the exclude button is checked, all the addresses within the filter range are denied access; all other addresses are allowed access.
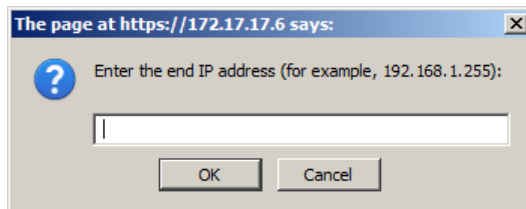
### **Adding Filters**
To add an IP filter, do the following:

1. Click **Add**. A dialog box similar to the one below appears:



2. Specify the filter address in the dialog box (for example, 192.168.0.200), then click **OK**.

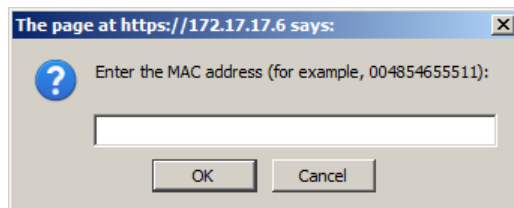   A second dialog box, similar to the one below, appears:

3. To filter a single IP address, key in the same address as the start IP. To filter a continuous range of addresses, key in the end number of the range (for example, 192.168.0.225).

4. After filling in the address, click **OK**.

Repeat these steps for any additional IP addresses you want to filter.

To add a MAC filter, do the following:

1. Click **Add**. A dialog box similar to the one below appears:



2. Specify the MAC address in the dialog box (for example, 001074670000), then click **OK**.

Repeat these steps for any additional MAC addresses you want to filter.

### IP Filter / MAC Filter Conflict

If there is a conflict between an IP filter and a MAC filter – for example, where a computer's IP address is allowed by the IP filter but its MAC address is excluded by the MAC filter – then that computer's access is blocked.

In other words, if either filter blocks a computer, then the computer is blocked, no matter what the other filter is set to.

### Modifying Filters

To modify a filter, select it in the IP Filter or MAC Filter list box and click **Modify**. The Modify dialog box is similar to the Add dialog box. When it comes up, simply delete the old address(es) and replace it with the new one(s).

### Deleting Filters

To delete a filter, select it in the IP Filter or MAC Filter list box and click **Delete**.

## Authentication & Authorization

The Authentication & Authorization page is used to set up login authentication and authorization management from external sources.

**Authentication & Authorization**

☐ Disable Local Authentication

**RADIUS Settings**

☐ Enable RADIUS

| | |
|---|---|
| Preferred RADIUS Server IP : | 0.0.0.0 |
| Preferred RADIUS Service Port : | 0 |
| Alternate RADIUS Server IP : | 0.0.0.0 |
| Alternate RADIUS Server Port : | 0 |
| Timeout : | 0      sec |
| Retries : | 0 |
| Shared Secret (at least 6 characters) : | |

### Disable Local Authentication

Selecting this option will disable login authentication locally on the eco PDU. The device can only be accessed using RADIUS authentication.

## RADIUS Settings

To allow authentication and authorization for the eco PDU device through a RADIUS server, do the following:

1. Check **Enable**.

2. Fill in the IP addresses and service port numbers for the Preferred and Alternate RADIUS servers. The default port number for the Preferred server is 1812; the default port number for the Alternate server is 1645.

   **Note:** Make sure that the port numbers you specify here match the port numbers used by the RADIUS servers.

3. In the *Timeout* field, set the time in seconds that the eco PDU device waits for a RADIUS server reply before it times out.

4. In the *Retries* field, set the number of allowed retries for attempting to connect to the RADIUS server.

5. In the *Shared Secret* field, key in the character string that you want to use for authentication between the eco PDU device and the RADIUS Server.

6. On the RADIUS server, set the entry for each user as follows:

   `su/xxxx`

   Where *xxxx* represents the Username given to the user when the account was created on the eco PDU device. The user's access rights are the ones assigned for the eco PDU device, as well. (See *Device Management*, page 63.)

**Note:** su/user supports view ports only; su/administrator supports all eco PDU functions.

## Private Certificate

When logging in over a secure (SSL) connection, a signed certificate is used to verify that the user is logging in to the intended site. For enhanced security, the *Private Certificate* section allows you to use your own private encryption key and signed certificate, rather than the default ATEN certificate.

There are two methods for establishing your private certificate: generating a self-signed certificate; and importing a third-party certificate authority (CA) signed certificate.

### Generating a Self-Signed Certificate

If you wish to create your own self-signed certificate, a free utility – openssl.exe – is available for download over the web.

### Obtaining a CA Signed SSL Server Certificate

For the greatest security, we recommend using a third party certificate authority (CA) signed certificate. To obtain a third party signed certificate, go to a CA (Certificate Authority) website to apply for an SSL certificate. After the CA sends you the certificate and private encryption key, save them to a convenient location on your computer.

### Importing the Private Certificate

To import the private certificate, do the following:

1. Click **Browse** to the right of *Private Key*; browse to where your private encryption key file is located; and select it.

2. Click **Browse** to the right of *Certificate*; browse to where your certificate file is located; and select it.

3. Click **Upload** to complete the procedure.

---

**Note:** 1. Clicking **Restore Default** returns the device to using the default ATEN certificate.

2. Both the private encryption key and the signed certificate must be imported at the same time.

---

When you have finished making your settings on this page, click **Save**.

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## Log

The eco PDU keeps a record of transactions that take place on its installation, and stores up to 128 events at one time. The *System Log* page provides a powerful array of filters and functions that allow you to view and export the log file data, as well as be informed by email of specified events as they occur.

## The System Log Event List

- Clicking on a device in the Sidebar displays its log events in the main panel's log event list.

- Clicking the **Refresh** button brings the log list up to date with the latest events.

- The entry box to the right of the Refresh button lets you set the number of events to display per page. Simply key in the number of your choice.

- The top right of the main panel shows the total number of pages in the log file, and what page you are currently viewing.

- The buttons on the bottom row function as follows:
    - **Clear** – click to erase the contents of the log event list
    - **First Page** – click to go to the first page of the log event list
    - **Previous Page** – click to move to the previous page of the log event list
    - **Next Page** – click to move to the next page of the log event list
    - **Last Page** – click to move to the last page of the log event list
    - **Export Log** – click to save the contents of the log event list to file.

# Notification Settings

The Notification Settings page is used to specify which of the eco PDU's components will receive notification of a log event. When you click the Notification Settings menu item, a page similar to the one below appears:



- The event categories are listed in the left column.
  - When you first open the page, only the main category items appear. (Main category item rows have a gray background.)
  - Sub-category items are nested under the main category headings. Click the arrow in front of the main category headings to display the sub-category items. (Sub-category item rows have a white background.)
- Click the checkboxes under the column headings to select which component(s) will receive notification of the log events.
  - Clicking on a main category heading's row automatically selects all the sub-category items nested below it.
  - If you only want to set notification for some of the sub-category events, don't put a check in the main category row. Instead, drop down the sub-category list, and only check the sub-category events you want.
- When you have finished making your setting choices, click **Save**. When a specified log event occurs, notification of that event will be sent to the selected component.
- Reset Digital Output: If an event has been triggered that changes the digital output sensor from Low to High, click this button to return the sensor to the Low state.

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# Maintenance

## Maintenance

The *Maintenance* function is used to upgrade the eco PDU's firmware, and to backup and restore the device's configuration settings.

### Firmware File

When you click the **Maintenance** tab, the display opens with the *Firmware Upgrade* menu page, which looks similar to the one below:

| Event Log Settings | | | | | |
| --- | --- | --- | --- | --- | --- |
| | | | | | Save |
| **Event List** | | | | | |
| Event | Aten Log server | SNMP | Syslog | EMail | Digital output |
| ▷ **Enable all System events** | ☐ | ☐ | ☐ | ☐ | ☐ |
| ▷ **Enable all Authentication events** | ☐ | ☐ | ☐ | ☐ | ☐ |
| ▷ **Enable all User Management events** | ☐ | ☐ | ☐ | ☐ | ☐ |
| ▷ **Enable all Device Management events** | ☐ | ☐ | ☐ | ☐ | ☐ |
| Reset Digital Output | | | | | |

A description of the items shown in this panel are given in the table, below:

| Item | Description |
| --- | --- |
| Check Main Firmware Version | If you enable *Check Main Firmware Version*, the eco PDU's current firmware level is compared with that of the upgrade file. If the current version is equal to or higher than the upgrade version, a popup message appears, to inform you of the situation and stops the upgrade procedure. |
| Name | Lists all of the eco PDU devices. Click to put a check in the checkbox of the device's whose firmware you want to upgrade. |
| F/W Version | Displays the eco PDU's current firmware version. |
| Filename | As new versions of the firmware become available, they are posted on our website and can be downloaded to a convenient location on your computer. Click the *Browse* button to select the downloaded upgrade file. |
| Upgrade | Click this button to upgrade the firmware of the selected devices. |

## Upgrading the Firmware

To upgrade the firmware refer to the screenshot on the preceding page, and do the following:

1. Go to our website and download the new firmware file to a convenient location on your computer.

2. Click the *Browse* button; navigate to where the firmware file is located and select it.

3. Click **Upgrade** to start the upgrade procedure.

   ◆ If you enabled *Check Main Firmware Version* the current firmware level is compared with that of the upgrade file. If the current version is equal to or higher than the upgrade version, a popup message appears, to inform you of the situation and stops the upgrade procedure.

   ◆ If you didn't enable *Check Main Firmware Version*, the upgrade file is installed without checking what its level is.

   ◆ Once the upgrade completes successfully, the switch resets itself.

4. Log in again, and check the firmware version to be sure it is the new one.

### ■ Firmware Upgrade Recovery

Should the eco PDU's firmware upgrade procedure fail, and the device becomes unusable, the following firmware upgrade recovery procedure will resolve the problem:

1. Power off the device.

2. Press and hold the Reset Switch in (see page 9).

3. While holding the Reset Switch in, power the switch back on.

This causes the switch to use the original factory installed main firmware version. Once the switch is operational, you can try upgrading the main firmware again.

## Backup/Restore

Selecting *Backup/Restore* on the menu bar gives you the ability to back up the switch's configuration and user profile information:



### Backup

To backup the device's settings do the following:

1. In the *Password* field, key in a password for the file.

   **Note:** Entering a password is optional. If you do enter a password, make a note of it, since you will need it to be able to restore the file.

2. Click **Save**.

3. When the browser asks what you want to do with the file, select *Save to disk*; then save it in a convenient location.

**Restore**

To restore a previous backup, do the following:

1. Click **Browse**; navigate to the file and select it.

   | |
   |---|
   | **Note:** If you renamed the file, you can leave the new name. There is no need to return it to its original name. |

2. In the *Password* field, key in the same password that you used to save the file.

   | |
   |---|
   | **Note:** If you did not set a password when you created the backup file, you can omit this step. |

3. Select as many of the options that are presented as you wish to restore.

4. Click **Restore**.

   After the file is restored, a message appears to inform you that the procedure succeeded.

# Chapter 10
# Remote Terminal Operation

## Overview

The eco PDU PE 7/8/9r series can be accessed via a remote terminal session using several methods, including Telnet, SSH, or PuTTY, as described in the sections that follow.

## Telnet

### Logging In
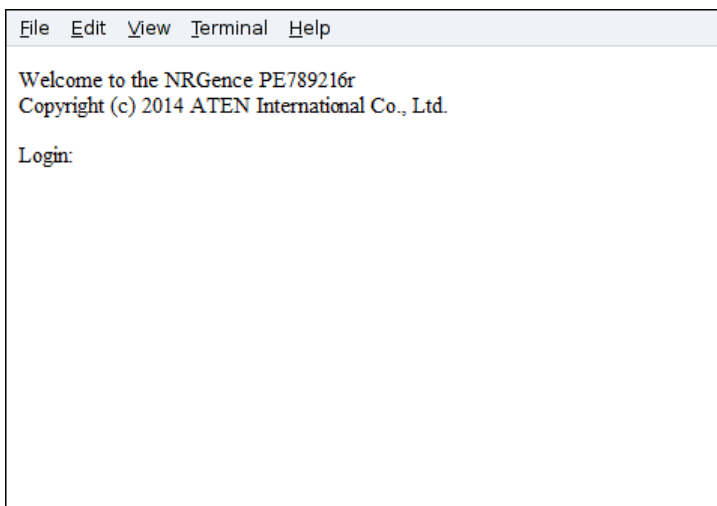
To log in to the eco PDU by means of a Telnet session, do the following:

1. On your computer, open a terminal (command line) session.

2. At the prompt, key in the eco PDU's IP Address in the following way:

   ```
   telnet [IP Address]
   ```

3. Press **Enter**.

   The login screen appears:



4. At the login prompt, provide your Username and Password.

5. Once a Telnet connection to the device is established, the eco PDU's text-based Configuration Menu comes up:

```
File  Edit  View  Terminal  Help

*******************************************************************
*           Welcome to NRGence - - PE789216r Configuration Setup Menu.        *
*******************************************************************
1. Outlet Access
2. User Management
3. Device Management
4. Device Log
5. Power Console
X. Exit

Select one to configure:
```

The text-based Configuration Menu provides text-based equivalents for the functions found under the web-based tabs and menus. You can reference the information provided for the browser version as you work your way through the submenus.

Note:  As with the browser version, access to many of these submenus are restricted to the administrator or users with administration permission. If you select a submenu that you are not authorized for, nothing will happen.

When you have finished with your session, bring up the Main Menu and press **X** to log out. After you are offline, you can simply close the terminal (command line) window.

# SSH
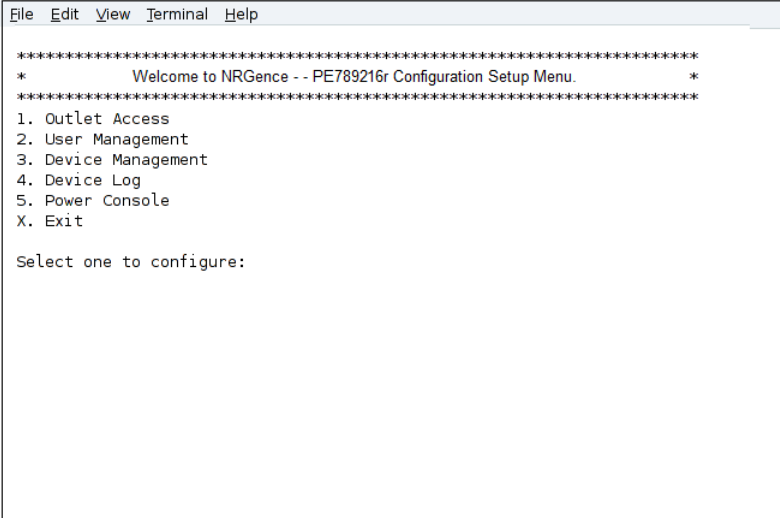
## Terminal Session (Linux):

To log in to the eco PDU by means of a secure SSH session, do the following:

1. Open a terminal (command line) on your computer.

2. At the prompt, key in your eco PDU Username and the eco PDU's IP Address in the following way:

   ```
   ssh [username@IP Address]
   ```

3. Press **Enter**

4. When you are prompted for a password, use your eco PDU password.

   Once an SSH connection to the device is established, the eco PDU's text-based Configuration Menu comes up:

```
File   Edit   View   Terminal   Help

***************************************************************
*          Welcome to NRGence - - PE789216r Configuration Setup Menu.        *
***************************************************************
1. Outlet Access
2. User Management
3. Device Management
4. Device Log
5. Power Console
X. Exit

Select one to configure:
```

This menu is the same as the configuration menu that appears with Telnet sessions (see page 92). It provides text-based equivalents for the functions found under the web-based tabs and menus. You can reference the information provided for the browser version as you work your way through the submenus.

## Third Party Utility (Windows):

SSH sessions can be implemented under Windows with the use of third party utility software, such as PuTTY, a free implementation of Telnet and SSH for the Win32 and Unix platforms. To make an SSH connection with PuTTY, do the following:

1. In the *Host* Name box, enter the Internet host name or IP Address of the server you want to connect to.
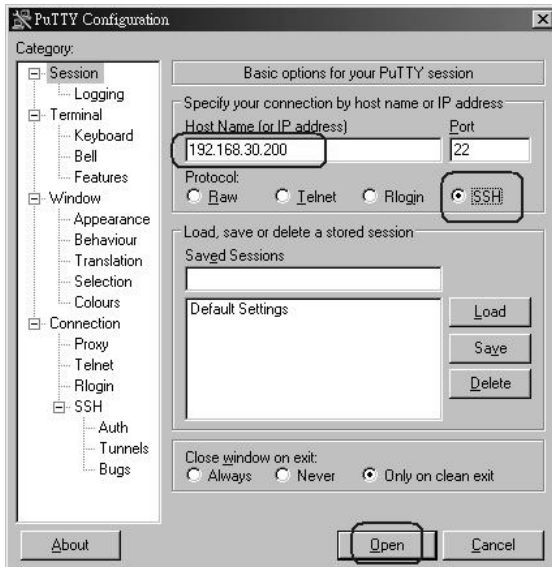


2. Select *SSH* from the Protocol buttons.

3. Click **Open** (at the bottom of the dialog box)

4. After you have connected, provide your eco PDU username and password at the login prompts.

   **Note:** If you make a mistake keying in the username, the SSH protocol doesn't allow you to try again. You must close PuTTY and start over.

Once an SSH connection to the device is established, the eco PDU's text-based Configuration Menu comes up. This menu is the same as the configuration menu that appears with Telnet sessions (see page 92).

# Appendix

## Safety Instructions

### General

- This product is for indoor use only.

- Read all of these instructions. Save them for future reference.

- Follow all warnings and instructions marked on the device.

- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.

- Do not use the device near water.

- Do not place the device near, or over, radiators or heat registers.

- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.

- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.

- Never spill liquid of any kind on the device.

- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

- To prevent damage to your installation it is important that all devices are properly grounded.

- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.

- The equipment should be installed near the wall socket outlet and the disconnect device (appliance coupler) should be readily accessible.

- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).

- Position system cables and power cables carefully; Be sure that nothing rests on any cables.

- When connecting or disconnecting power to hot pluggable power supplies, observe the following guidelines:

  - Install the power supply before connecting the power cable to the power supply.

  - Unplug the power cable before removing the power supply.

  - If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supplies.

- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.

- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.

- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.

  - The power cord or plug has become damaged or frayed.

  - Liquid has been spilled into the device.

  - The device has been exposed to rain or water.

  - The device has been dropped, or the cabinet has been damaged.

  - The device exhibits a distinct change in performance, indicating a need for service.

  - The device does not operate normally when the operating instructions are followed.

- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

- Do not connect the RJ-11 connector marked "Sensor" to a public telecommunication network.

## Rack Mounting

* Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.

* Always load the rack from the bottom up, and load the heaviest item in the rack first.

* Make sure that the rack is level and stable before extending a device from the rack.

* Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.

* After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.

* Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.

* Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.

* Ensure that proper airflow is provided to devices in the rack.

* Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer

* Do not step on or stand on any device when servicing other devices in a rack.

## The eco PDU's Main Power Cord

Use the power cord supplied with this package. If it becomes necessary to replace the cord supplied with this package, be sure to use a cord of at least the same standard as the one provided.

## Securing the Power Cables

To secure the cables in the eco PDU's power outlets, use only the ATEN Lock-Your-Plug cable holders that have been specifically designed to work with the eco PDU. Using any other kind of cable securing device could be highly dangerous. Please contact your ATEN dealer for information about ATEN Lock-Your-Plugs.

# Technical Support

## International

- For online technical support – including troubleshooting, documentation, and software updates: **http://eservice.aten.com**
- For telephone support, see *Telephone Support*, page iii

## North America

| Email Support | | support@aten-usa.com |
| --- | --- | --- |
| Online Technical Support | Troubleshooting Documentation Software Updates | http://www.aten-usa.com/support |
| Telephone Support | | 1-888-999-ATEN ext 4988 |

When you contact us, please have the following information ready beforehand:

- Product model number, serial number, and date of purchase.
- Your computer configuration, including operating system, revision level, expansion cards, and software.
- Any error messages displayed at the time the error occurred.
- The sequence of operations that led up to the error.
- Any other information you feel may be of help.

# IP Address Determination

If you are an administrator logging in for the first time, you need to access the eco PDU in order to give it an IP address that users can connect to. There are two methods to choose from. In each case, your client computer must be on the same network segment as the eco PDU. After you have connected and logged in you can give the device its fixed network address. (See *Device Management*, page 49.)

**Method 1:**
For computers running Windows, an IP address can be determined and/or assigned with the IP Installer utility. The utility can be obtained from the *Download* area of our web site or from the software CD. Look under *Driver/SW*, and the model of your device. After downloading the utility to your computer, do the following:

1. Unzip the contents of *IPInstaller.zip* to a directory on your hard drive.

2. Go to the directory that you unzipped the IPInstaller program to and run *IPInstaller.exe*. A dialog box similar to the one below appears:
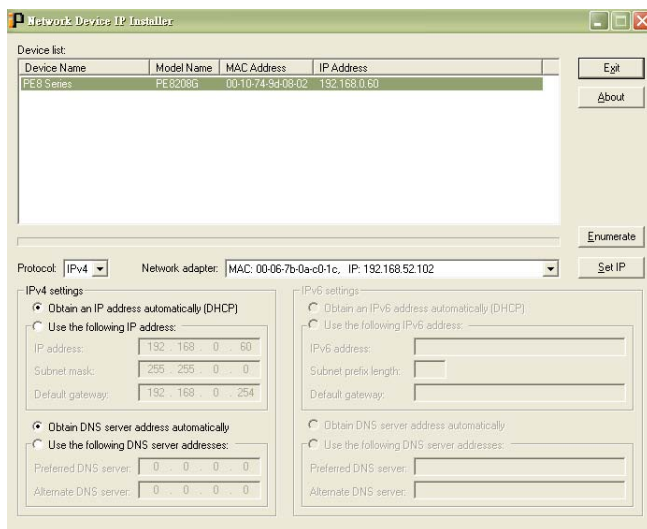
*(Continued from previous page.)*

3.  Select the device in the *Device List*.

> **Note:** 1.  If the list is empty, or your device doesn't appear, click
> **Enumerate** to refresh the Device List.
>
> 2.  If there is more than one device in the list, use the MAC address
> to pick the one you want. The eco PDU's MAC address is located
> on its bottom panel.

4.  Select either *Obtain an IP address automatically (DHCP)*, or *Specify an
    IP address*. If you chose the latter, fill the IP Address, Subnet Mask, and
    Gateway fields with the information appropriate to your network.

5.  Click **Set IP**.

6.  After the IP address shows up in the Device List, click **Exit** to end the
    program.

## Method 2:

1.  Set your computer's IP address to 192.168.0.*XXX*

    Where *XXX* represents any number or numbers except 60. (192.168.0.60) is
    the default address of the eco PDU.)

2.  Specify the device's default IP address (192.168.0.60) in your browser,
    and you will be able to connect.

3.  Assign a fixed IP address for the device (see *IPv4 Configuration*, page 51),
    that is suitable for the network segment that it resides on.

4.  After you log out, reset your computer's IP address to its original value.

5.  Once you have logged in, go to Network Settings to set up the permanent
    IP environment (see *IPv4 Configuration*, page 51).

## Method 3:
NRGence eco Sensors allows you to determine/assign an IP address in order to
configure a PDU device and monitor power status of the equipment connected
to it. NRGence eco Sensors can be obtained from the Download area of the
ATEN web site.

# Specifications

There are 15 models in the PE7xxx / PE8xxx / PE9xxx range. They are available in 16-port or 24-port versions, with different power inlet/cord variations.

A basic comparison is show in the table, below. Full specifications for each of the models are provided on the following pages.

## Basic Comparison

| Model | Inlet / Cord | Outlets | | Metering Level | Outlet Switching |
|---|---|---|---|---|---|
| PE7216rB | NEMA 6-20P | 16 | 14 x IEC 320 C13 + 2 x IEC 320 C19 | PDU / 1 x Bank / Outlet | No |
| PE8216rB | | | | | Yes 16/16 |
| PE9216rB | | | | | Yes 8/16 |
| PE7216rG | IEC 60320 C20 | | | | No |
| PE8216rG | | | | | Yes 16/16 |
| PE9216rG | | | | | Yes 8/16 |
| PE7324rB / PE7324rJ | NEMA L6-30P | 24 | 21 x IEC 320 C13 + 3 x IEC 320 C19 | PDU / 2 x Bank / Outlet | No |
| PE8324rB / PE8324rJ | | | | | Yes 24/24 |
| PE9324rB / PE9324rJ | | | | | Yes 16/24 |
| PE7324rG | IEC 60309 32A | | | | No |
| PE8324rG | | | | | Yes 24/24 |
| PE9324rG | | | | | Yes 16/24 |

**Note:** The PE7324rJ, PE8324rJ, and PE9324rJ are identical to their B model counterparts but have power cords designed for the Japanese market.

## PE7216rB / PE8216rB / PE9216rB

| Function | | | PE7216rB | PE8216rB | PE9216rB |
|---|---|---|---|---|---|
| Power Outlets | Direct | | 16 | | |
| Connectors | Power Inlet | | 1 x NEMA 6-20P | | |
| | Power Outlets | NEMA | NA | | |
| | | IEC | Total: 14 x IEC 320 C13 + 2 x IEC 320 C19 Bank 1-1, Outlet 1–8: 7 x C13 + 1 x C19. Bank 1-2, Outlet 9–16: 7 x C13 + 1 x C19 | | |
| | Daisy Chain | In / Console | 1 x RJ-45 Female (Silver) | | |
| | | Out | 1 x RJ-45 Female (Silver) | | |
| | Sensor | | 4 x RJ-11 Female (Black) | | |
| | LAN | | 1 x RJ-45 Female (Silver) + LEDs (Orange/Green) | | |
| | Modem | | 1 x RJ-45 Female (Silver) | | |
| | Digital Output | | 1 x Terminal Block | | |
| LEDs | Outlet Status | | NA | 16 (Orange) | 8 (Orange) |
| | Outlet / Station ID | | 2-digit 7-segment (Orange) | | |
| | Outlet / Station ID | | 2 (Green) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 / FW Upgrade | | 3-digit 7-segment (Orange) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 | | 7 (Green) | | |
| | Power | | 1 (Green) | | |
| | Online | | 1 (Green) | | |
| | Link | | 1 (Green) | | |
| | 10/100 Mbps | | 1 (Orange / Green) | | |
| Switches | LED Display Select | | 1 x Pushbutton | | |
| | Outlet / Station ID Select | | 2 x Pushbutton | | |
| | Reset | | 1 x Semi-recessed Pushbutton | | |
| | Power | | 1 x 20A Non-fuse Breaker | | |
| Nominal Input Power | | | 100–240V~; 50–60Hz; 16A (UL), 20A (Max.) | | |
| Nominal Input/Output Voltage | | | 100–240 VAC | | |
| Power Capacity | | | 4.2kW | | |
| Nominal Output Power | Per Port | IEC 320 C19 | 100–240V~; 50–60Hz; 16A (UL), 20A (Max.) | | |
| | | IEC 320 C13 | 100–240V~; 50–60Hz; 12A (UL), 15A (Max.) | | |
| | Total | | 100–240V~; 50–60Hz; 16A (UL), 20A (Max.) | | |
| Environment | Operating Temperature | | 0–50°C | | |
| | Storage Temperature | | -20–60°C | | |
| | Humidity | | 0–80% RH Non-condensing | | |
| Physical Properties | Housing | | Metal | | |
| | Weight | | 3.7 kg | | |
| | Dimensions (L x W x H) | | 132.50 x 6.60 x 4.40 cm | | |

## PE7216rG / PE8216rG / PE9216rG

| Function | | | PE7216rG | PE8216rG | PE9216rG |
|---|---|---|---|---|---|
| Power Outlets | Direct | | 16 | | |
| Connectors | Power Inlet | | 1 x IEC 60320 C20 | | |
| | Power Outlets | NEMA | NA | | |
| | | IEC | Total: 14 x IEC 320 C13 + 2 x IEC 320 C19<br>Bank 1-1, Outlet 1–8: 7 x C13 + 1 x C19.<br>Bank 1-2, Outlet 9–16: 7 x C13 + 1 x C19 | | |
| | Daisy Chain | In / Console | 1 x RJ-45 Female (Silver) | | |
| | | Out | 1 x RJ-45 Female (Silver) | | |
| | Sensor | | 4 x RJ-11 Female (Black) | | |
| | LAN | | 1 x RJ-45 Female (Silver) + LEDs (Orange/Green) | | |
| | Modem | | 1 x RJ-45 Female (Silver) | | |
| | Digital Output | | 1 x Terminal Block | | |
| LEDs | Outlet Status | | NA | 16 (Orange) | 8 (Orange) |
| | Outlet / Station ID | | 2-digit 7-segment (Orange) | | |
| | Outlet / Station ID | | 2 (Green) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 / FW Upgrade | | 3-digit 7-segment (Orange) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 | | 7 (Green) | | |
| | Power | | 1 (Green) | | |
| | Online | | 1 (Green) | | |
| | Link | | 1 (Green) | | |
| | 10/100 Mbps | | 1 (Orange / Green) | | |
| Switches | LED Display Select | | 1 x Pushbutton | | |
| | Outlet / Station ID Select | | 2 x Pushbutton | | |
| | Reset | | 1 x Semi-recessed Pushbutton | | |
| | Power | | 1 x 16A Non-fuse Breaker | | |
| Nominal Input Power | | | 100–240V~; 50–60Hz; 16A (Max.) | | |
| Nominal Input/Output Voltage | | | 100–240 VAC | | |
| Power Capacity | | | 3.7kW | | |
| Nominal Output Power | Per Port | IEC 320 C19 | 100–240V~; 50–60Hz; 15A (Max.) | | |
| | | IEC 320 C13 | 100–240V~; 50–60Hz; 10A (Max.) | | |
| | Total | | 100–240V~; 50–60Hz; 15A (Max.) | | |
| Environment | Operating Temperature | | 0–40°C | | |
| | Storage Temperature | | -20–60°C | | |
| | Humidity | | 0–80% RH Non-condensing | | |
| Physical Properties | Housing | | Metal | | |
| | Weight | | 3.9 kg | | |
| | Dimensions (L x W x H) | | 132.50 x 6.60 x 4.40 cm | | |

## PE7324rB/rJ/ PE8324rB/rJ / PE9324rB/rJ

| Function | | | PE7324rB / rJ | PE8324rB / rJ | PE9324rB / rJ |
|---|---|---|---|---|---|
| Power Outlets | Direct | | 24 | | |
| Connectors | Power Cord | | NEMA L6-30P | | |
| | Power Outlets | IEC | Total: 21 x IEC 320 C13 + 3 x IEC 320 C19 Bank 1-1, Outlet 1–8: 7 x C13 + 1 x C19. Bank 1-2, Outlet 9–16: 7 x C13 + 1 x C19 Bank 2, Outlet 17–24: 7 x C13 + 1 x C19 | | |
| | Daisy Chain | In / Console | 1 x RJ-45 Female (Silver) | | |
| | | Out | 1 x RJ-45 Female (Silver) | | |
| | Sensor | | 4 x RJ-11 Female (Black) | | |
| | LAN | | 1 x RJ-45 Female (Silver) + LEDs (Orange/Green) | | |
| | Modem | | 1 x RJ-45 Female (Silver) | | |
| | Digital Output | | 1 x Terminal Block | | |
| LEDs | Outlet Status | | NA | 24 (Orange) | 16 (Orange) |
| | Outlet / Station ID | | 2-digit 7-segment (Orange) | | |
| | Outlet / Station ID | | 2 (Green) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 / FW Upgrade | | 3-digit 7-segment (Orange) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 | | 7 (Green) | | |
| | Power | | 1 (Green) | | |
| | Online | | 1 (Green) | | |
| | Link | | 1 (Green) | | |
| | 10/100 Mbps | | 1 (Orange / Green) | | |
| Switches | LED Display Select | | 1 x Pushbutton | | |
| | Outlet / Station ID Select | | 2 x Pushbutton | | |
| | Reset | | 1 x Semi-recessed Pushbutton | | |
| | Power | | 2 x 16A UL489 Breaker | | |
| Nominal Input Power | | | 100–240V~; 50–60Hz; 24A (UL), 30A (Max.) | | |
| Nominal Input/Output Voltage | | | 100–240 VAC | | |
| Power Capacity | | | 6.2kW | | |
| Nominal Output Power | Per Port | IEC 320 C19 | 100–240V~; 50–60Hz; 12A (UL), 15A (Max.) | | |
| | | IEC 320 C13 | 100–240V~; 50–60Hz; 12A (UL), 15A (Max.) | | |
| | Total | | 100–120V~; 50–60Hz; 24A (UL), 30A (Max.) | | |
| Environment | Operating Temperature | | 0–50°C | | |
| | Storage Temperature | | -20–60°C | | |
| | Humidity | | 0–80% RH Non-condensing | | |
| Physical Properties | Housing | | Metal | | |
| | Weight | | 6.5 kg | | |
| | Dimensions (L x W x H) | | 177.50 x 6.60 x 4.40 cm | | |

## PE7324rG / PE8324rG / PE9324rG

| Function | | | PE7324rG | PE8324rG | PE9324rG |
|---|---|---|---|---|---|
| Power Outlets | Direct | | 24 | | |
| Connectors | Power Cord | | 1 x IEC 60309 32A | | |
| | Power Outlets | IEC | Total: 21 x IEC 320 C13 + 3 x IEC 320 C19<br>Bank 1-1, Outlet 1–8: 7 x C13 + 1 x C19.<br>Bank 1-2, Outlet 9–16: 7 x C13 + 1 x C19<br>Bank 2, Outlet 17–24: 7 x C13 + 1 x C19 | | |
| | Daisy Chain | In / Console | 1 x RJ-45 Female (Silver) | | |
| | | Out | 1 x RJ-45 Female (Silver) | | |
| | Sensor | | 4 x RJ-11 Female (Black) | | |
| | LAN | | 1 x RJ-45 Female (Silver) + LEDs (Orange/Green) | | |
| | Modem | | 1 x RJ-45 Female (Silver) | | |
| | Digital Output | | 1 x Terminal Block | | |
| LEDs | Outlet Status | | NA | 24 (Orange) | 16 (Orange) |
| | Outlet / Station ID | | 2-digit 7-segment (Orange) | | |
| | Outlet / Station ID | | 2 (Green) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 / FW Upgrade | | 3-digit 7-segment (Orange) | | |
| | Current / Volt / P.D. / Sensor1–Sensor4 | | 7 (Green) | | |
| | Power | | 1 (Green) | | |
| | Online | | 1 (Green) | | |
| | Link | | 1 (Green) | | |
| | 10/100 Mbps | | 1 (Orange / Green) | | |
| Switches | LED Display Select | | 1 x Pushbutton | | |
| | Outlet / Station ID Select | | 2 x Pushbutton | | |
| | Reset | | 1 x Semi-recessed Pushbutton | | |
| | Power | | 2 x 16A UL489 Breaker | | |
| Nominal Input Power | | | 100–240V~; 50–60Hz; 32A (Max.) | | |
| Nominal Input/Output Voltage | | | 100–240 VAC | | |
| Power Capacity | | | 7.4kW | | |
| Nominal Output Power | Per Port | IEC 320 C19 | 100–240V~; 50–60Hz; 15A (Max.) | | |
| | | IEC 320 C13 | 100–240V~; 50–60Hz; 10A (Max.) | | |
| | Total | | 100–240V~; 50–60Hz; 30A (Max.) | | |
| Environment | Operating Temperature | | 0–40ºC | | |
| | Storage Temperature | | -20–60ºC | | |
| | Humidity | | 0–80% RH Non-condensing | | |
| Physical Properties | Housing | | Metal | | |
| | Weight | | 6.5 kg | | |
| | Dimensions (L x W x H) | | 177.50 x 6.60 x 4.40 cm | | |

# Administrator Login Failure

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it, for example), you can clear the login information with the following procedure:

1. Power off the eco PDU and remove its housing.

2. Short the jumper labeled J1 (PIN5 and PIN6).
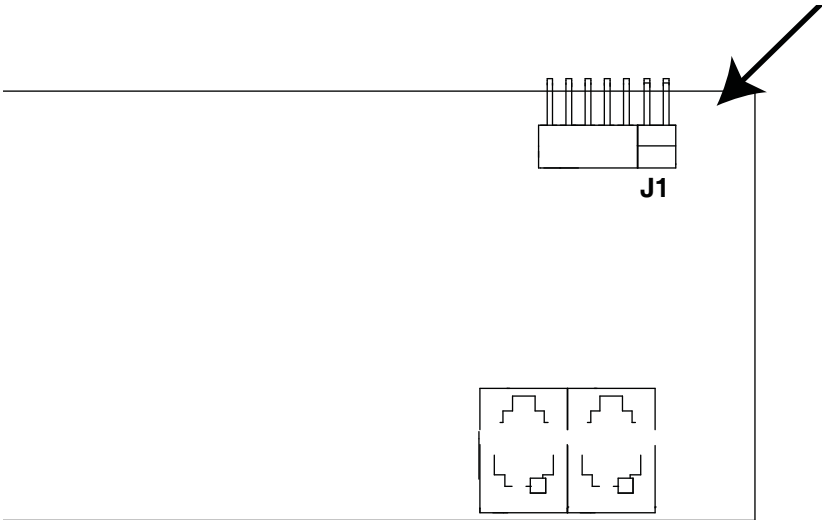


3. Power on the eco PDU.

4. After the beep indicates successfully powered on, power off the switch.

5. Remove the jumper cap from J1.

6. Close the housing and start the eco PDU.

   After you start, you can use the default Username and Password to log in.

# Limited Warranty

ATEN warrants this product against defects in material or workmanship for a period of one (1) year from the date of purchase. If this product proves to be defective, contact ATEN's support department for repair or replacement of your unit. ATEN will not issue a refund. Return requests can not be processed without the original proof of purchase.

When returning the product, you must ship the product in its original packaging or packaging that gives an equal degree of protection. Include your proof of purchase in the packaging and the RMA number clearly marked on the outside of the package.

This warranty becomes invalid if the factory-supplied serial number has been removed or altered on the product.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence or modification of any part of the product. This warranty does not cover damage due to improper operation or maintenance, connection to improper equipment, or attempted repair by anyone other than ATEN. This warranty does not cover products sold AS IS or WITH FAULTS.

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