User Manual for eConnect® PDU and Electronic Access Control

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INTRODUCTION – User Manual for eConnect® PDU and eConnect® Electronic Access Control

This document is the User Manual for CPI eConnect® Power Distribution Units (PDUs) and Electronic Access Control (EAC).

UL Listed for use in US and Canada.

Legal Information

The information contained in this guide is subject to change without notice. Chatsworth Products, Inc. (CPI) shall not be liable for technical or editorial errors or omissions contained herein; nor is it liable for any injury, loss, or incidental or consequential damages resulting from the furnishing, performance or use of this material and equipment.

Warranty

CPI warrants all CPI-branded hardware products to be free from defects in material and/or workmanship (CPI's Standard Limited Warranty) for a period of three (3) years following the date of purchase (the Original Warranty Period).

The customer must contact CPI in writing or by oral communication confirmed in writing within the Original Warranty Period to report a product that the customer claims is defective. CPI reserves the sole and absolute right to determine whether or not the product or any part thereof is defective. In the event a product (or any part thereof) is determined by CPI to be defective (an Accepted Claim), CPI will provide a re-manufactured or replacement product or part (the Replacement Product) at no cost to the customer and issue a Return Material Authorization (RMA) number.

Extended Limited Warranty

CPI Extended limited warranties on CPI-Branded Electronic and Non-Electronic hardware products are available for two additional years beyond the expiration of the Original Warranty Period (3 years). CPI's Extended Limited Warranty can be purchased concurrently with, or separately from, the initial purchase of the product until the expiration of the Original Warranty Period for that product.

For more information on CPI Warranties, visit the website.

Nomenclature

PDU: eConnect Power Distribution Unit product
Socket/Receptacle/Outlet: Electrical output port
Secure Array™: Connects up to 32 PDUs under one IP address. A second connection provides failover capability, allowing linked PDUs to stay connected when one loses functionality.
Click Secure: PDUs with locking IEC outlets (LX-XXXXX) that secure straight equipment power cords to vertical PDUs to prevent accidental disconnections.
Primary Role: The role that is assigned to the PDU that is attached to the network and serves as the beginning of the Secure Array. This PDU should

have a level of functionality that is equal to or higher than that of all the remaining PDUs within the array. In an array with several PDUs with the highest level of functionality, the PDU with the most outlets among this group should be assigned the Primary Role.

Secondary Role: The role assigned to a PDU that is 1) linked to the primary PDU, or 2) a standalone PDU.

Alternate Role: The role assigned to the PDU that is connected to the network to provide a backup network connection if the Primary Role PDU loses power. This PDU must be equivalent to the Primary PDU in functionality and number of outlets.

PRODUCT FEATURES

Vertically Mounted PDUs:

Part Number Series Px-1xxxx and Lx-1xxxx:
Product Dimensions: 70.5”H x 2.2”W x 2.2”D (1791 mm x 56 mm x 56 mm)
Shipping Dimension: 82”H x 7.5”W x 10”D (2060 mm x 191 mm x 254 mm)
Shipping Weight: 22 lb (10.0 kg)

Part Number Series Px-2xxxx and Lx-2xxxx:
Product Dimensions: 72”H x 2.35”W x 2.2”D (1829 mm x 60 mm x 56 mm)
Shipping Dimension: 84”H x 9”W x 10”D (2134 mm x 229 mm x 254 mm)
Shipping Weight: 25 lb (11.3 kg)

Product Dimensions: 77.9”H x 2.7”W x 2.2”D (1978 mm x 68 mm x 56 mm)
Shipping Dimension: 86”H x 10.7”W x 5.5”D (2185 mm x 272 mm x 140 mm)
Shipping Weight: 30 lb (12 kg)

Part Number Series Px-3xxxx and Lx-3xxxx:
Product Dimensions: 75” x 2.67” x 2.2” (1829 mm x 68 mm x 56 mm)
Shipping Dimension: 89”H x 10”W x 10”D (2261 mm x 254 mm x 254 mm)
Shipping Weight: 27 lb (12.2 kg)

Product Dimensions: 77.9”H x 2.7”W x 2.2”D (1978 mm x 68 mm x 56 mm)
Shipping Dimension: 86”H x 10.7”W x 5.5”D (2185 mm x 272 mm x 140 mm)
Shipping Weight: 30 lb (12 kg)

Part Number Series Px-6xxxx and Lx-6xxxx:
Product Dimensions: 70.5”H x 4”W x 2.2”D (1791 mm x 101.6 mm x 56 mm)
Shipping Dimension: 86”H x 10.7”W x 5.5”D (2185 mm x 272 mm x 140 mm)
Shipping Weight: 36 lb (16.1 kg)

Input Voltage:
100 – 415 Volts, varies by part number

Output Voltage:
100 – 240 Volts, varies by part number

Input/Output Configurations:

Single-Phase 120 Volts input/output:
Three conductor input cable (P + N + E)
One or two branch circuits: Branch A or Branch A and B.

Single-Phase 100-240 Volts input / output:
C20 input connector
One or two branch circuits: Branch A or Branch A and B.

Single-Phase 208 Volts input/output:

Three conductor input cable (2P + E)
One or two branch circuits: Branch A or Branch A and B.

Single-Phase 120/208 Volts input and 208V or 120/208V Output:

Four conductor input cable (2P + N + E)
One or two branch circuits: Branch A or Branch A and B.

Single-Phase 220-240 Volts input/output:

Three conductor input cable (2P + E)
One or two branch circuits: Branch A or Branch A and B.

Three-Phase 208 Volt input/output:

Four conductor input cable (3P + E)
Three and six branch circuits: Branch XY, YZ, ZX

Three-Phase – 208 Volt input/ 208 Volt and/or 120 Volt output:

Five conductor input cable (3P + N + E)
Three branch circuits: Branch XY, YZ, ZX and/or XN, YN, ZN

Three-Phase WYE 380-415 Volts input 220 to 240 Volt output :

Five conductor input cable (3P + N + E)
Three and six branch circuits: Branch XN, YN, ZN

Power Input Cable:

Length: Standard: 10 ft (3 m)
Gauge: 6 – 12 AWG, varies by part number
Plug type: Current, Voltage and Configuration dependent, varies by part number
Some PDUs have an IEC C20 Input and do not include a power input cable.

Circuit Breakers:

Type: Single or Double Pole Electro-hydraulic UL489 listed Breakers Quantity:
One, two, three or six, varies by part number
Rating: 16 Amperes, 20 Amperes or 30 Amperes, varies by part number

Receptacles:

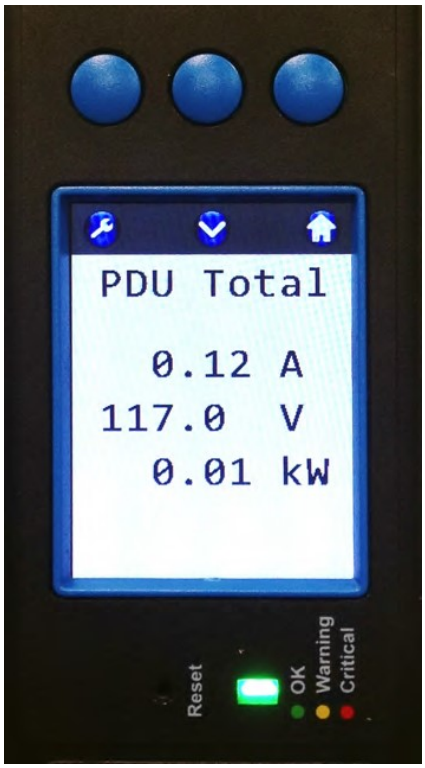
Types: NEMA, IEC, varies by part number
Quantity: Varies by part number
Rating: 15 Amperes or 20 Amperes, varies by part number

Mounting:

Mounting style: 2 x Tool-less Buttons on the PDU rear cover Distances:
61.25” (1556 mm) and 64.75” (1645 mm) apart
Positions: 4 mounting positions (A1, A2, B1, B2)

LCD local display with push button control:

Dimension: 1.5” x 2.0” (38 mm x 51 mm)
Resolution: 240 x 320



Actual information displayed may vary depending on whether the unit is single-phase or three-phase.

Single-phase PDUs

USB port: 2

Quantity: 2

Function: CPI Firmware upgrades

Secure Array/PDU Linking/Serial Port:

Connector type: (2) RJ45 for (1) link-in/serial combo port and (1) link-out port for serial communication and PDU linking using a Cat 5/6 cable

Environmental port:

Connector type: (1) RJ11
Connection: (1) or (2) environmental probes (order separately)
(order two probes with a splitter P/N 17761-003 to connect two probes).
For environmental sensing of temperature (°F or °C) and relative humidity (%)

Ethernet port:

Connector type: (1) RJ45
Speed: 10/100/1000
Megabit/sec
Support: IPv6; IPv4; SNMP v1, v2, v3

Proprietary Auxiliary ports:

For Electronic Access Control or other peripherals*
Connector type: (2) RJ45
Aux1: For rear door
Aux 2: For front door

* On vertical (0U) eConnect PDUs manufactured after March 1, 2017

NOTE: Models manufactured before March 1, 2017 do not feature auxiliary ports for eConnect Electronic Access Control. These models (shown below) can be upgraded with newer firmware versions for PDUs with 1 Gb Ethernet. The Electronic Access Control instructions in Page 54 do not apply to these models.

Vertical eConnect PDUs manufactured before March 1, 2017:

Horizontally Mounted PDUs:

Type: Horizontally mounted
Part Number Series Px-5xxxx
Product Dimensions: 2U H x 19” EIA x 10.1”D (89 mm x 432 mm x 257 mm)
Shipping Dimension: 8.5”H x 20”W x 22”D (216 mm x 508 mm x 559 mm)
Shipping Weight: 13 lb (5.9 kg)

Input Voltage:
120 - 240 Volts, varies by part number

Output Voltage:
100 – 240 Volts, varies by part number

Input/Output Configurations:

Single-Phase 100-240 Volts input/output
C20 input connector
One branch circuit: Branch A

Single-Phase 120 Volts input/output
L5-20P or L5-30 Input connector
One or two branch circuits: Branch A or Branch A and B

Single-Phase 208 Volts input/output
L6-20P or L6-30 Input connector
One or two branch circuits: Branch A or Branch A and B

Single-Phase 220-240 Volts input/output
Three conductor input cable (2P + E)
Two branch circuits: Branch A and B

Power Input Cable:
Length: Standard: 10 ft (3 m)
Gauge: 10 – 12 AWG, varies by part number
Plug type: Current, Voltage and Configuration dependent, varies by part number Some PDUs have an IEC C20 Input and do not include a power input cable.

Circuit Breakers:
Type: Double Pole Electro-hydraulic UL489 listed Breakers Quantity: One or Two, varies by part number
Rating: 16 Amperes or 20 Amperes, varies by part number

Receptacles:
Types: NEMA, IEC, varies by part number
Quantity: Varies by part number
Rating: 15 Amperes or 20 Amperes, varies by part number

Mounting:
Mounting style: Horizontal 19" EIA
(2) 3.47”H (88.1 mm) mounting flanges with hardware receiving holes spaced 17” (431.8 mm) apart (on either side of the PDU) to support standard 19” EIA mounting onto equipment rails

LCD local display with push button control:
Dimension: 1.5” x 2.0” (38 mm x 51 mm)
Resolution: 240 x 32

Single-Phase PDUs

Actual information displayed may vary depending on whether the unit is Single-Phase or Three-Phase.

USB port:

Quantity: 2

Function: CPI Firmware upgrades

Secure Array™/PDU Linking/Serial Port:

Connector type: (2) RJ45 for (1) link-in/serial combo port and (1) link-out port for serial communication and PDU linking using a Cat 5/6 cable

Environmental ports:

Connector type: (1) RJ11

Connection: (1) or (2) Environmental probes (order separately; order two probes with a splitter P/N 17761-003 to connect two probes).

For environmental sensing of temperature (°F or °C) and relative humidity (%)

Ethernet port:

Connector type: (1) RJ45 Speed: 10/100/1000 Megabit/sec

Support: IPv6; IPv4; SNMP v1, v2, v3.

PRODUCT LABELING AND CERTIFICATIONS

	The presence of the CE Mark on equipment means that it has been designed, tested and certified as complying with all applicable European Union (CE) regulations and recommendations.
	An authorized testing laboratory has evaluated a sample of the product to determine that it meets applicable national standards
	Product compliance (electrical, gas and other safety standards) to North American safety standards
	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
	Nemko has tested or certified the product according to national standards official safety regulations in Norway
	Samples of this product met UL's safety requirements for US and Canada.
	Do not dispose this product as unsorted municipal waste.

PDU MODELS

Basic (CPI P/Ns: P1-xxxxx & L1-xxxxx):

- No local or remote monitoring available. Does not have display or connections
- Ensures reliability within modern data centers with high hot aisle temperatures as a result of 149˚F (65˚C) ambient temperature rating.
- Available with patented Click Secure Locking Outlets to prevent accidental disconnections.
- Available in vertical configurations.

Monitored (CPI P/Ns: P3-xxxxx & L3-xxxxx):

- Local LCD display and remote monitoring via IP, Serial, SNMP.
- High ambient temperature rating of 149˚F (65˚C).
- Features CPI's Secure Array™ IP Consolidation, for linking up to 32 PDUs under a single IP address.
- Vertical configurations are available with patented Click Secure Locking Outlets to prevent accidental disconnections.
- Local and remote monitoring of total PDU amperage, power and voltage on single-phase PDUs; line amperage, power and voltage on three-phase PDUs.
- Local and remote branch circuit monitoring of amperage, power, voltage and power factor at each breaker.
- Optional local and remote environmental monitoring of temperature and humidity, requires an external sensor (P/N 17761-003, ordered separately).
- Models manufactured after March 1, 2017, provide integration with eConnect Electronic Access control
- Available in vertical and horizontal configurations.

Monitored-Pro (CPI P/Ns: P4-xxxxx & L4-xxxxx):

- Local LCD display and remote monitoring via IP, Serial, SNMP.
- High ambient temperature rating of 149˚F (65˚C).
- Features CPI's Secure Array™ IP Consolidation, for linking up to 32 PDUs under a single IP address.
- Available with patented Click Secure Locking Outlets to prevent accidental disconnections.
- Local and remote monitoring of total PDU amperage, power and voltage on single-phase PDUs; power and voltage on three-phase PDUs.
- Local and remote branch circuit monitoring of amperage,

power, voltage and power factor at each breaker.
- Local monitoring of amperage at each outlet; remote monitoring of individual outlet amperage, power and voltage at each outlet.
- Optional local and remote environmental monitoring of temperature and humidity, requires an external sensor .(P/N 17761-003, ordered separately)
- Models manufactured after March 1, 2017, provide integration with eConnect Electronic Access control
- Available in vertical configurations.

Switched (CPI P/Ns: P5-xxxxx & L5-xxxxx):

- Local LCD display and remote monitoring via IP, Serial, SNMP
- High ambient temperature rating of 149˚F (65˚C).
- Features CPI's Secure Array™ IP Consolidation, for linking up to 32 PDUs under a single IP address.
- Vertical configurations are available with patented Click Secure Locking Outlets to prevent accidental disconnections.
- Local and remote monitoring of total PDU amperage, power and voltage on single-phase PDUs; power and voltage on three-phase PDUs.
- Local and remote branch circuit monitoring of amperage, power, voltage and power factor at each breaker.
- Remote outlet control (ON/OFF) capability for every outlet.
- Optional local and remote environmental monitoring of temperature and humidity, requires an external sensor. (P/N 17761-003, ordered separately)
- Models manufactured after March 1, 2017, provide integration with eConnect Electronic Access control
- Available in vertical and horizontal configurations.

Switched-Pro (CPI P/Ns: P6-xxxxx & L6-xxxxx):

- Local LCD display and remote monitoring via IP, Serial, SNMP.
- High ambient temperature rating of 149˚F (65˚C).
- Features CPI's Secure Array™ IP Consolidation, for linking up to 32 PDUs under a single IP address.
- Available with patented Click Secure Locking Outlets to prevent accidental disconnections.
- Local and remote monitoring of total PDU amperage, power and voltage on single-phase PDUs; power and voltage on three-phase PDUs.
- Local and remote branch circuit monitoring of amperage, power voltage and power factor at each breaker.
    - Local monitoring of amperage at each outlet; remote

monitoring of individual outlet amperage, power and voltage at each outlet remote outlet control (ON/OFF) capability for every outlet.

- Optional local and remote environmental monitoring of temperature and humidity, requires an external sensor. (P/N 17761-003, ordered separately)
- Models manufactured after March 1, 2017, provide integration with eConnect Electronic Access control
- Available in vertical configurations.

INSTALLATION CHECKLIST for eConnect PDUs and Electronic Access Control (EAC)

Safety Warnings and Cautions

- DO NOT OPEN THE CHASSIS of an eConnect PDU. There are no user serviceable parts within an eConnect PDU. Opening or removing covers, receptacle plates, or other access points may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids on the chassis.
- Do not insert objects of any kind into the eConnect chassis via vent holes or any openings as they may contact dangerous voltage points, which can be fatal or cause harmful electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- PDU must be installed VERTICALLY in a RESTRICTED ACCESS LOCATION.
- RESTRICTED ACCESS LOCATION: location for equipment where both of the following apply:
- Access can only be gained by SERVICE PERSONS or by USERS who
- have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken
- Access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.
- Hot surface warning label: The equipment may be hot under full load.

Checklist for EAC:

- Connect wires between latch and CAN bus module
- Connect wires between sensors and CAN bus module
- Connect wires between CAN bus and PDU. Aux 1 should be connected to the rear door's CAN module. Aux 2 should be connected to the front door's CAN module.
- Login to the web GUI using the default login information of "admin/admin", and navigate to the "Cabinet Access – Settings" page.
- Select the checkbox for the appropriate lock you wish to enable, and click "Save"

- The lock is powered when you see a continuous blue light on the lock. At this point you should be able to refresh the web page and see the status update appropriately.
- Program the Card Reader and Key Card ID (Go to Page xx for detailed information).
- Use the web GUI to change cabinet access and logging settings (Cabinet Access and Logging tabs respectively)
- The light will flash magenta/blue when the latch opens

Additional Software

The eConnect PDU can be configured, monitored and controlled using the built-in software as explained in this manual.

In addition to the software that is built-in to the eConnect PDU, there are two other software programs that can be used for PDU configuration, monitoring and control.

- eConnect Serial Communicator software allows you to monitor and configure PDUs using a direct serial connection. A Serial Setup Cable (CPI P/N 35941-131) is also required. Download from http://www.chatsworth.com/support-and-downloads/downloads/software/

- eConnect Firmware Upgrader software allows you to upgrade firmware over the network for multiple standalone and linked PDUs that have firmware version 1.17.227 or later. Download from http://www.chatsworth.com/support-and-downloads/downloads/software/

INSTALLATION GUIDE

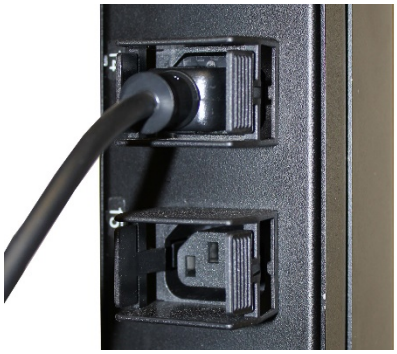
Preparation:

- Prepare a plan identifying where each rack device is to be connected to the PDU receptacle. For ease of power cord management, if you are installing a vertically mounted PDU, it is recommended to connect the rack device to the receptacle that is approximately at the same height.

- It is recommended to retain the PDU Ethernet Hardware Address (MAC address) available through the LCD display under PDU Info. It's recommended to record the PDU name, rack/cabinet name, location and MAC address for future reference.

- If the rack device has more than 1 input for power for purpose of redundancy, the power cables should be connected to different PDUs.

Locking Outlets:

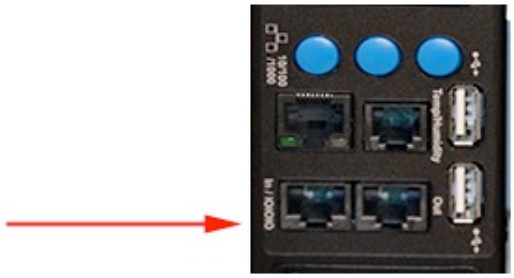


- If a PDU has locking outlets (LX-XXXXX), the device will feature clamp-like components at each straight IEC outlet. Simply insert the power cord into the outlet by pushing the boot of the cord through the locking device until you hear and feel a click. The click serves as an indication that the plug is fastened or “locked” securely in place. To remove the plug, lightly squeeze the locking mechanism between the fingers of one hand while placing the fingers of the other over the boot of the power cord and pulling gently out gently. The power cord will easily be released.

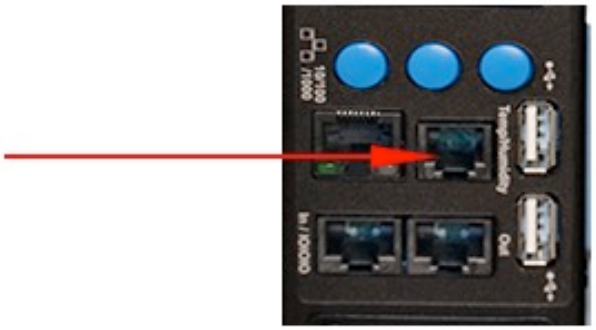
External Connections:

- Install the PDU into the cabinet and secure the PDU external ground wire to the cabinet ground stud.
- Optional: In/ Serial Port:
  - For daisy chaining when linking PDUs, use a standard CAT5/6 cable.
  - For running the EPSerial.exe application, use CPI serial cable (P/N 35941-131).

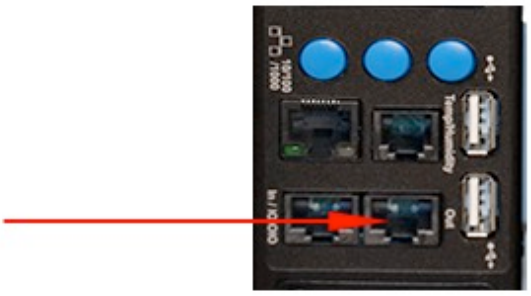
- Optional: Ethernet Port: Connect to LAN. Use CAT5/6 cable.



- Optional: Environmental Probe Port.
  Use environmental probes with splitter (P/N 117761-003):



- Optional: Out Port: For Secure Array when linking PDUs. Use a standard CAT5/6 cable.



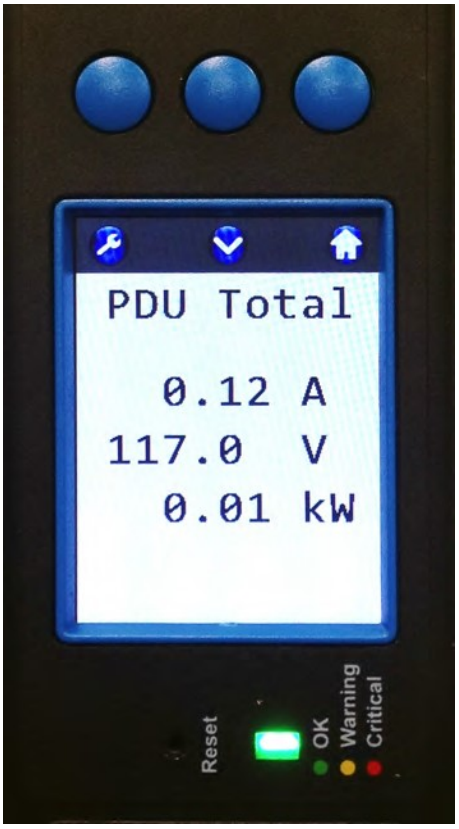
- Optional: USB Port: For firmware upgrades use USB Flash Drive.

Energizing the PDU

- Attach the input power cord to a matching power source.
- The PDU status light will blink Green for about 60 seconds as the PDU is booting up.
- A solid Green status light will follow with the LCD display coming on and displaying all zeroes.
- Once the PDU is energized, connect cabinet devices to their respective outlets.

USING THE LOCAL DISPLAY

CPI's multifunctional LCD display has a 240 x 320 pixel resolution and can be navigated by three soft buttons located immediately above the display.



Actual information displayed may vary depending on whether the unit is single-phase or three-phase.

Single-phase PDU

The local interface can display the following information:

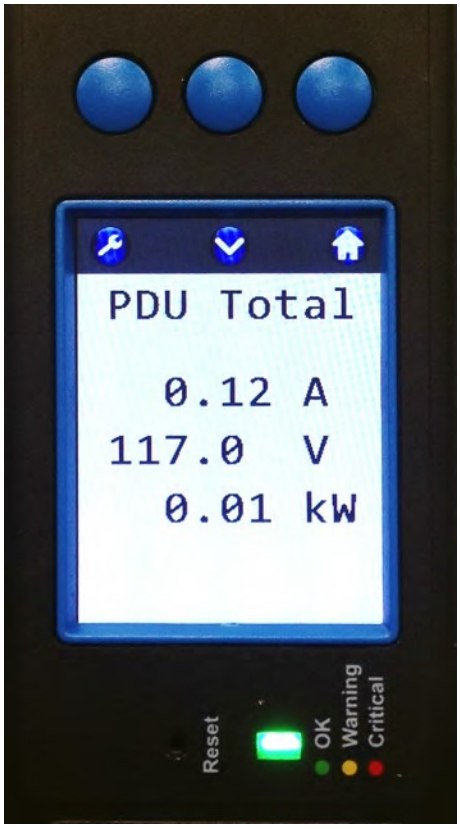
- Sum of current, voltage and power values for single-phase PDUs
- Line input current and sum of voltage and power values on three-phase PDUs
- Current, voltage, power and power factor values per branch breaker
- Temperature and humidity values when optional environmental probes are attached
- Per outlet current on Monitored Pro (P4-xxxxx) and Switched Pro (P6-xxxxx) models
- Alarm notification when predefined warning or critical thresholds are reached

The local interface can also be used to set up many functions of an eConnect PDU as following:

- Network IP setup (v4 and v6)
- Display settings – brightness, timeout, orientation
- PDU role (primary or secondary)
- PDU info

Basic Menu Navigation

The legend below explains the meaning of each button on the PDU display:



Note: single-phase PDU display shown.

Menu button/icon definitions and functions

Go to the Main Menu.

Note: In PDUs in the Secure Array, the (blue) icon turns (green).

Note: The home icon turns (purple) during a firmware upgrade.

Select the highlighted menu item.

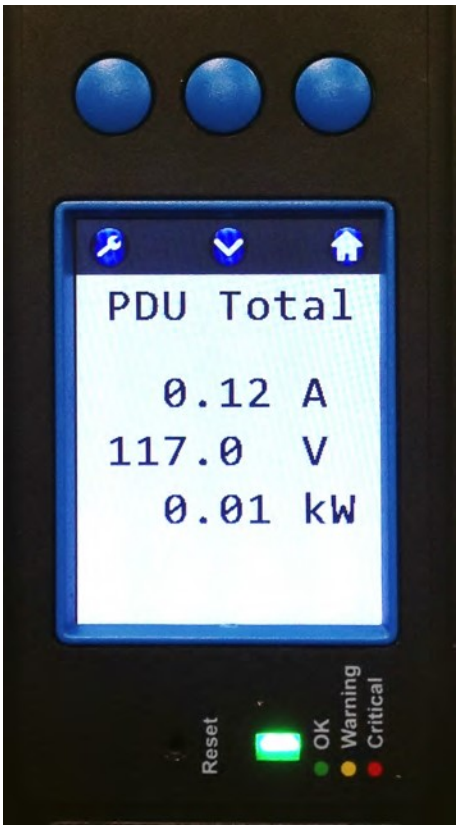
Go to Setup menu.

Move highlighted menu item down or to the right.

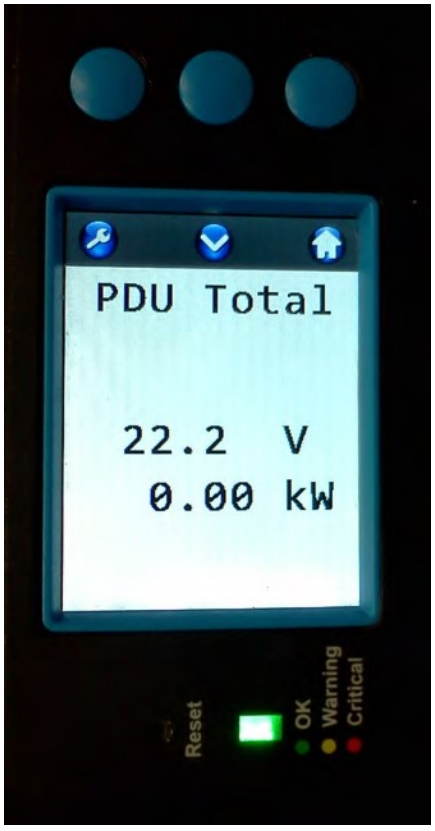
Move highlighted menu item up or to the left.

Monitoring PDU Conditions

The main screen on single-phase PDUs list total amperage, voltage and power usage by equipment attached to the PDU. The main screen on three-phase PDUs lists total voltage and power usage by equipment attached to the PDU.



Single-phase PDU



Three-phase PDU

From the Main menu press the:

Left button to set up the PDU
Middle button to view the next data screen
Right button to go back to the Main Menu

The following screen(s) list branch circuit values (CB1, CB2 or XY, YZ, ZX). There is one screen per phase/branch.

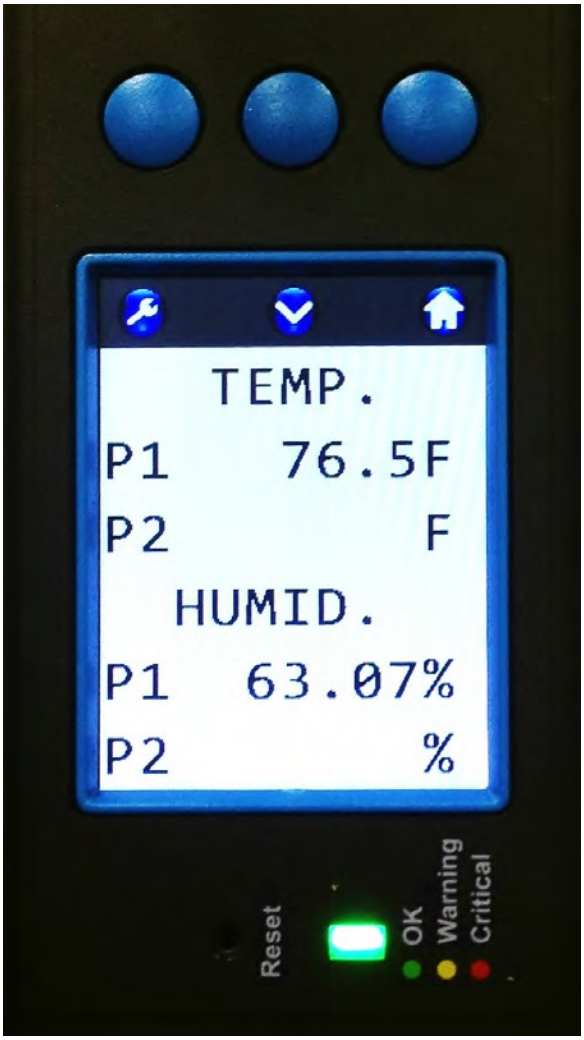
Click on:

Left button to set up the PDU

Right button to go back to the Main Menu

Middle button to scroll through the remaining screens

After scrolling through the branch/phase screens, the PDU will display the Environment summary screen. Environmental probes (P/N 17761-003) must be attached to the PDU for environmental values to display.



Click on the middle button to view next data screen This will return to the PDU Total screen

Click on:
Left button to set up the PDU
Right button to go back to the Main Menu

On Monitored Pro (P/N P4-xxxxx & L4-xxxxx) and Switched Pro (P/N P6-xxxxx & L6-xxxxx) PDUs, the following screen(s) list total current use for each outlet. Eight outlets are listed on each screen.

Click on the middle button to view next data screen

Click on:
Left button to set up the PDU
Right button to go back to the Main Menu
Middle button to go to the next data screen

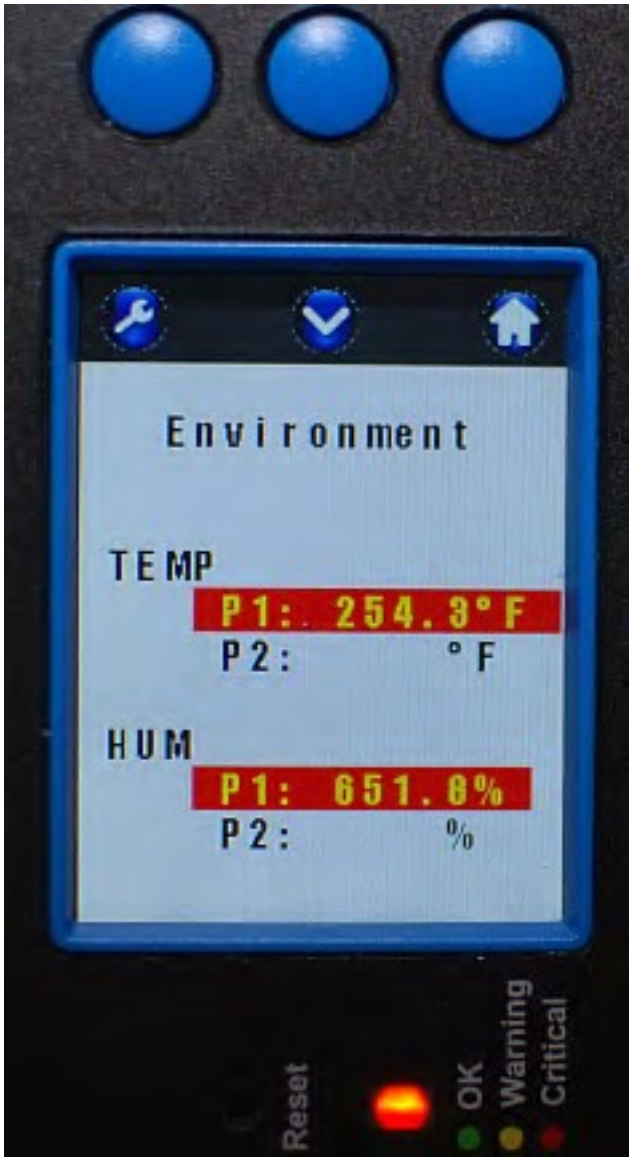
Alarms

When any alarm or warning threshold is hit, the Alarms summary will be displayed before the PDU Total values when the **Home Icon** is selected.

Color codes:
Text with Yellow background: Warning condition was reached.
Text with Red background: Critical condition was reached.

Click on:
Left button to access the setup menu
Middle button to view additional summary screens
Right button to return to the home (this) screen

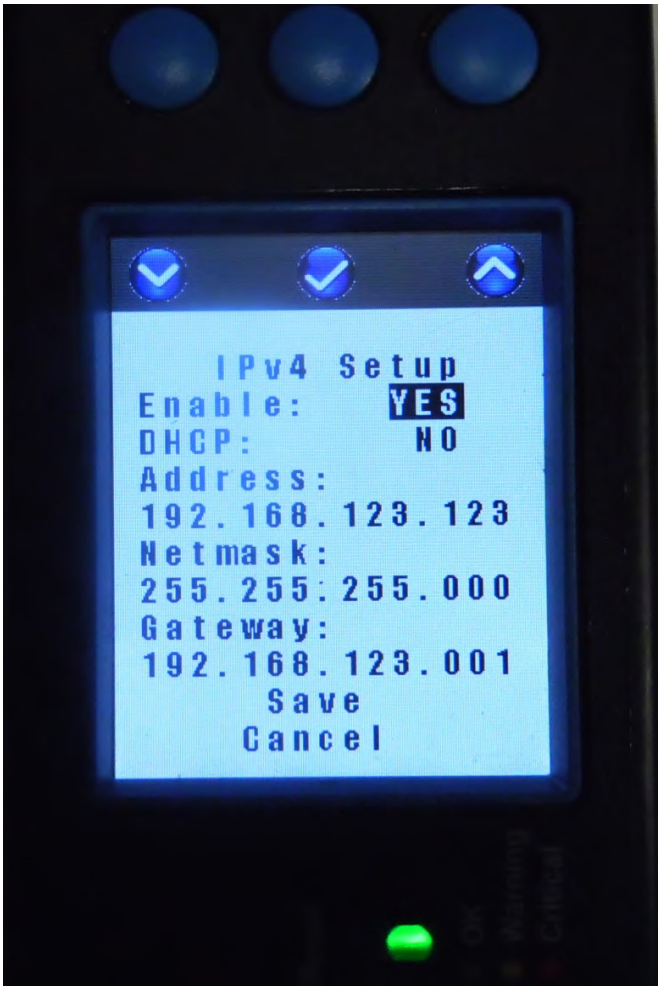
Additionally, when there is an alarm, the out of range measurements are highlighted on the respective summary screen, and the LED next to the display will flash.



Network Configuration

Select the **Left Button** to access the PDU Setup Menu

Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options
Select **Exit** to exit this screen
Click on middle button to set up IPv4 Network



Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options
Select **Save** or **Cancel** to exit this screen
Save updates IP information immediately
Cancel makes no changes to the setup

Return to the Setup Menu.
Use the Left Button to select IPv6 Network.
Click on middle button to set up IPv6 Network

Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options
Select **Save** or **Cancel** to exit this screen
Save updates IP information immediately
Cancel makes no changes to the setup

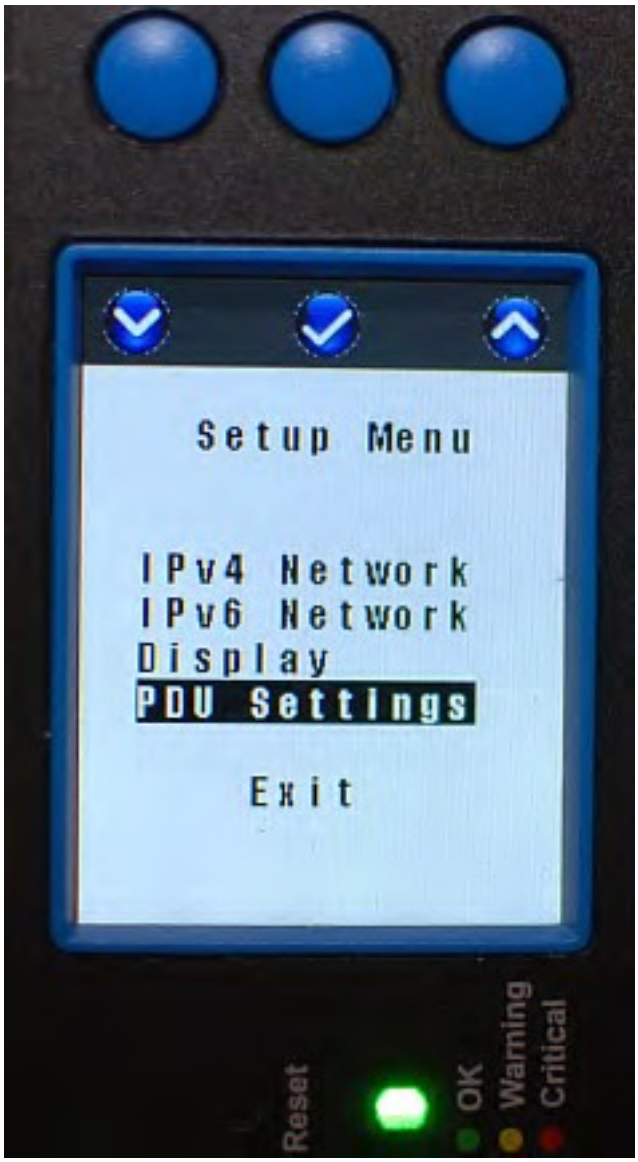
Display Setup

Return to the Setup Menu.
Use the Left button to select Display.
Click on middle button to set up the Display

Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options
Timeout – Controls how long display remains on (minutes)
Brightness – Controls display brightness (1-9)
Input Cord – Controls display orientation (TOP or BOT input cord location). This rotates the display 180° so that it can be easily read regardless of whether the PDU is mounted with the cord toward the top or bottom of the cabinet.
Outlet – Controls whether individual outlet current measurements are displayed (Show or Hide) on Monitored Pro (P4-xxxxx & L4-xxxxx) and Switched Pro (P6-xxxxx & L6-xxxxx) models
Select **Save** or **Cancel** to exit this screen
Save updates IP information immediately
Cancel makes no changes to the setup

PDU Settings



Return to the Setup Menu.
Use the Left button to select PDU Settings.
Click on middle button to set up advanced info for the PDU
Optional: **Click on:**
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

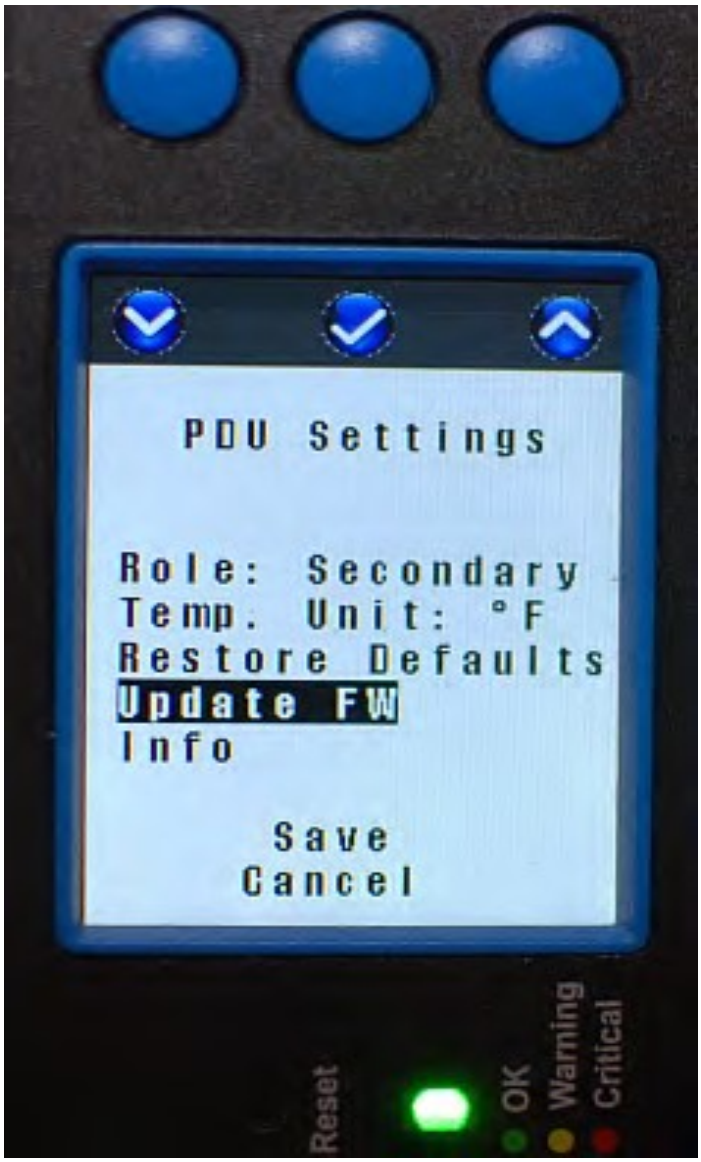
Click on:
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options
Role – Choose **PRIMARY** if PDU is the **FIRST PDU** in a Secure Array™. Only one PDU may be Primary, and this must be the PDU with the highest level of functionality and highest number of outlets within that functionality. Choose **ALTERNATE** if the PDU will be a backup to the Primary. Only one PDU may be ALTERNATE, and this PDU must match the functionality and outlet quantity of the Primary in order to fully support the array. Otherwise keep or choose **SECONDARY**. See page 49 for additional details.
Temp – Choose Celsius or Fahrenheit
Restore Defaults – Choose to select which fields will be restored
(confirmation needed, see details on the next page)
Update FW – Choose to update firmware locally through USB port
Save – Confirm all changes made in this session
Cancel – Cancel all changes made in this session

Click on middle button to restore Default values for the PDU
Optional: **Click on:**
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

Click on:
Left button to traverse down the list of option
Middle button to select the highlighted option
Right button to traverse up the list of options
Network Only – Will immediately reset the IP address back to the default address (192.168.123.123).
Config Only – Will immediately reset PDU and outlet names, alarm thresholds, etc. back to defaults.
User Only – Will immediately delete all accounts except the default administrative user account: **Admin, admin.**
Reset All – Resets Network, Config and User values to defaults. **Reset Device** – Resets all values and reboots the main communications module. Outlets will not lose power, but you will lose your network connection and monitoring during reboot.

Note: The physical reset button under the screen will Reset Device and erase all local memory, including log files.

Update Firmware



Click on middle button to update firmware for the PDU.
Optional: **Click on:**
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

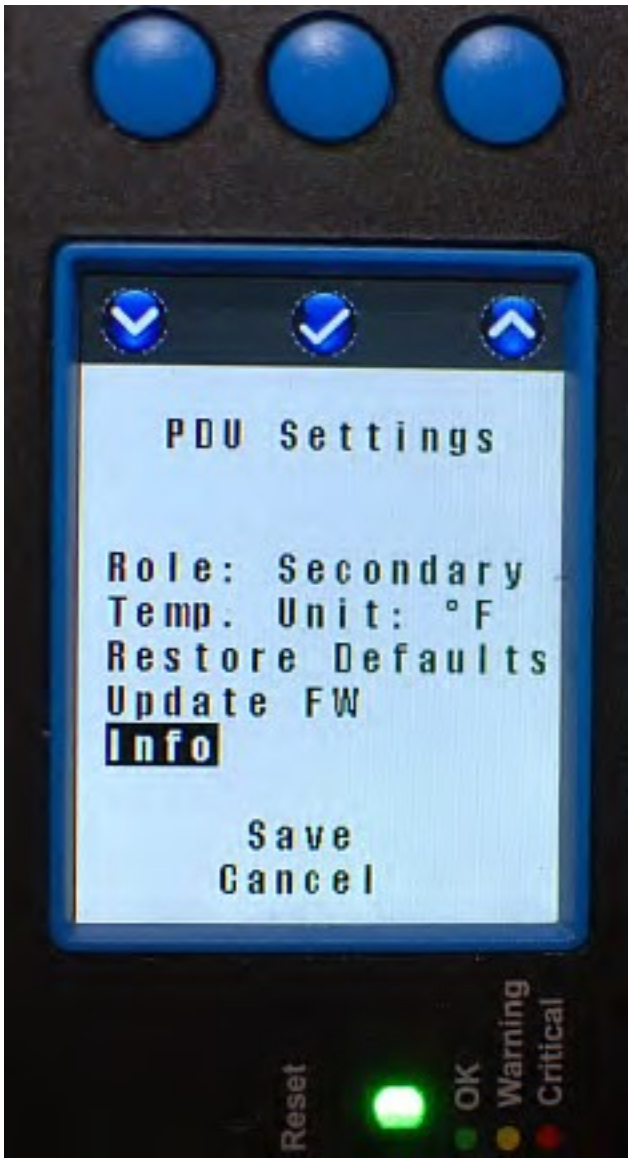
Click on:

Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

Sample of Updating – (above)

Sample of Failed updating – (below)

PDU Model Information



Click on middle button to display the information of the PDU.
Optional: **Click on:**
Left button to traverse down the list of options
Middle button to select the highlighted option
Right button to traverse up the list of options

Click on middle button to traverse back to the PDU Settings Menu.

USING THE BUILT-IN WEB SERVER APPLICATION

Login

All eConnect PDUs, excluding Basic models (P1-XXXX and L1-XXXX), are shipped with:

A 1 GB Ethernet connection and built-in Web Server Application Default IP address: **192.168.123.123**
Default User name/Password: **admin/admin**

You can access the PDU using the default IP address, or you can use the LCD Local display (see page 23) or the PDUSerial.exe application (see page 69) to change the default IP address to the appropriate IP address.

- To access the PDU, connect the Ethernet port to a network switch
- From Web Browser on a computer that is network accessible to the PDU, type: http://PDU address. For example, the default would be: http://192.168.123.123

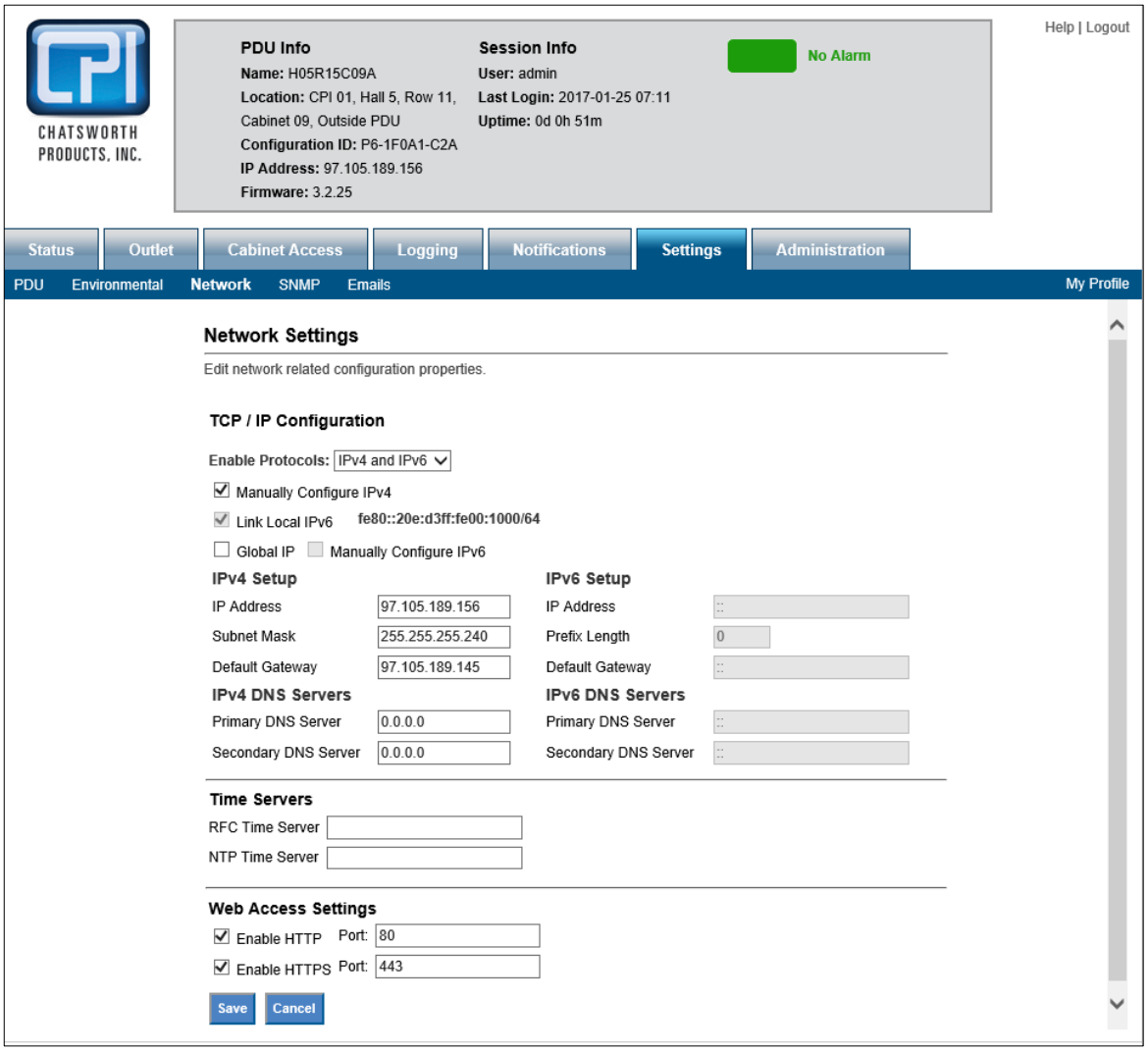
The Login Screen will display:

Log in using default User name and password: **admin**, **admin** and **click on Login** button or user name and password if it has been created.

First Login – Set Date and Time

The PDU has data logging and alarm notification functions that benefit from a time and date stamp. However, the PDU does not have an internal clock. So, each time you power the PDU, you must manually set the time and date or assign a Time Server to do so automatically.

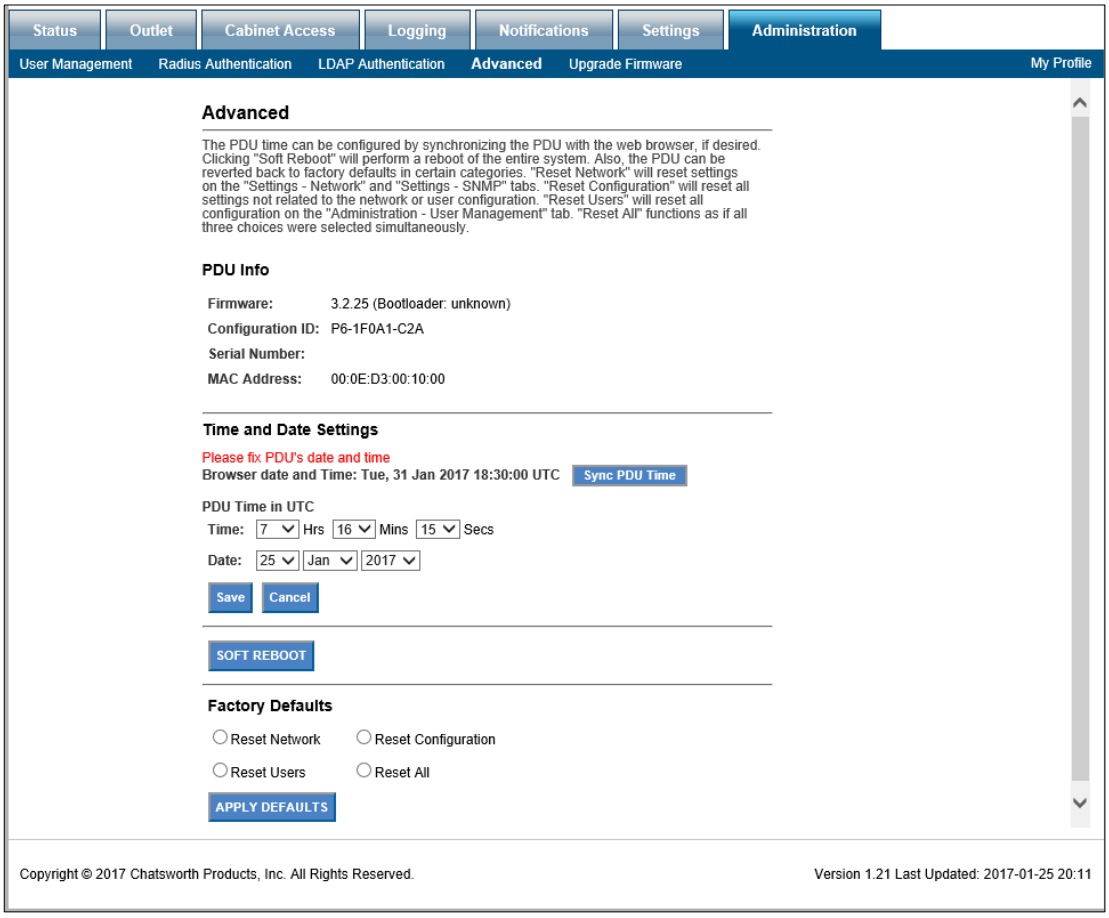
To assign a Time Server, click on the **Settings** tab, **Network** sub menu. Scroll down the page to the heading **Time Servers.**



Enter the IP Address of the RFC or NTP Time Server.

The PDU must have network access to the time server. For detailed network setup, see **Settings – Network** on page 54.

If you do not utilize a time server, or decide to set the time and date manually, click on the **Administration** tab, **Advanced** sub menu.



Click on Sync PDU time and then **Save** button to update the clock on the PDU using the browser date and time, or manually set the time with the drop boxes.

Note that if you perform a firmware upgrade, the PDU will reboot and the time will need to be manually reset, unless you have assigned Time Server to the PDU.

The remainder of the manual is ordered according to the tabs on the screen displayed above, so the next section is Status and the Status sub menus.

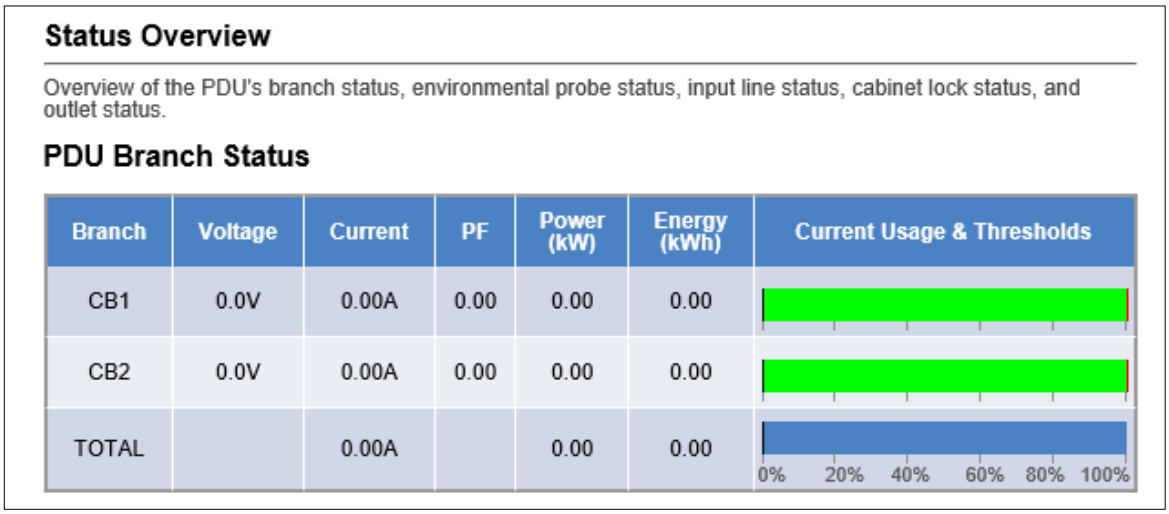
Note that the screenshot above is from a Switched Pro PDU, which includes Outlet Control and Monitoring features. Note that there are tabs for Status, Outlet, Settings and Administration. However, there is no Outlet tab on Monitored models (P3-XXXX and L3-XXXX).

Status – Overview

Click on the **Status** tab**, Overview** sub menu to view circuit, sensor, input and outlet status.

All models present branch circuit status and sensor status (when attached).

The screenshot below shows a six-breaker model with PDU Circuit Status for branch circuits (XN1, YN1, ZN1, XN2, YN2 and ZN2). Note that there are also single breaker/circuit, two-breaker/circuit and three-breaker/circuit models. Your model may display fewer circuits.



Status Overview

Overview of the PDU's branch status, environmental probe status, input line status, cabinet lock status, and outlet status.

PDU Branch Status

Branch	Voltage	Current	PF	Power (kW)	Energy (kWh)	Current Usage & Thresholds
CB1	0.0V	0.00A	0.00	0.00	0.00	
CB2	0.0V	0.00A	0.00	0.00	0.00	
TOTAL		0.00A		0.00	0.00	0% 20% 40% 60% 80% 100%

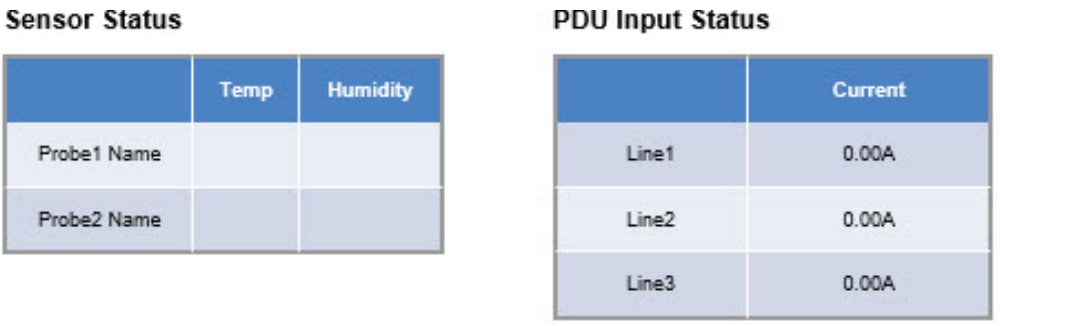
Once alarm thresholds are set (see page 50 and 52), the PDU Circuit Status table under the Status tab, Overview sub menu will show the operating range as a green bar, warning range as a yellow bar, and alarm range as a red bar. The actual measured value will be shown as a black line overlaying the graph.

This allows a quick visual reference for available power within the acceptable operating range for each circuit. The total power consumed is also displayed at the bottom of the graph as a percentage of power available.

Scroll down.

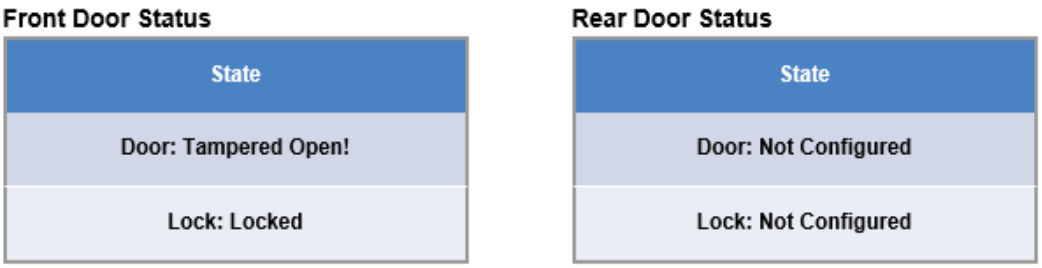
If an optional Environmental Probe is attached to the PDU, temperature and humidity will be displayed under Sensor Status. You can connect two probes to each PDU.

Three-phase PDUs will also display PDU Input Status – the amount of current (Amperes) on each line input before the breakers. This value is not logged.



If deploying PDU with Auxiliary Ports and eConnect EAC, scroll down the page to view door and lock status.

If eConnect EAC is attached to the PDU, the doors and the locks will be displayed under Front Door Status and Rear Door Status.



Door status:

- **Not Configured:** Lock is not enabled.
- **Closed:** Door is closed.
- **Opened:** Door is opened.
- **Tampered Open:** Door is opened, and lock is locked or tampered unlocked or force unlocked.

Lock status:

- **Not Configured:** Lock is not enabled.
- **Locked:** Lock is locked and handle is in the cradle
- **Force Unlocked:** Unlock using the GUI
- **Tamper Unlocked:** Unlock using the key and handle is not in the cradle.
- **Unlocked via Key Card:** A registered key card was used to unlock.

Scroll down.

Monitored Pro (P4-XXXXX & L4-XXXXX), Switched (P5-XXXXX & L5-XXXXX), and Switched Pro (P6-XXXXX & L6-XXXXX) models will also present per outlet status. The image below shows a Switched Pro model.

Switched models do not include Current, Voltage, Power or Energy values.
Monitored Pro models do not include Status or Control values.

Outlet Status

Outlet Name	Status	Control	Branch	Current	Voltage	Power (kW)	Energy (kWh)	Groups
1 - Outlet 1	Off	☐	CB1	0.00A	117.5V	0.00	0.11	Storage
2 - Outlet 2	On	☐	CB1	0.00A	117.5V	0.00	0.02	Storage
3 - OutletName3	Off	☐	CB1	0.00A	117.5V	0.00	0.10	Storage
4 - OutletName4	Off	☐	CB1	0.00A	117.5V	0.00	0.02	Storage
5 - OutletName5	On	☐	CB1	0.00A	117.5V	0.00	0.02	Servers
6 - OutletName6	On	☐	CB1	0.00A	117.5V	0.00	0.02	Servers
7 - OutletName7	On	☐	CB1	0.00A	117.5V	0.00	0.02	Servers
8 - OutletName8	On	☐	CB1	0.00A	117.5V	0.00	0.02	Servers
9 - OutletName9	On	☐	CB1	0.00A	117.5V	0.00	0.02	Storage
10 - OutletName10	Off	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
11 - OutletName11	Off	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
12 - OutletName12	Off	☐	CB1	0.00A	117.5V	0.00	0.10	N/A
13 - OutletName13	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
14 - OutletName14	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
15 - OutletName15	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
16 - OutletName16	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
17 - OutletName17	On	☐	CB1	0.00A	117.5V	0.00	0.04	N/A
18 - OutletName18	Off	☐	CB1	0.00A	117.5V	0.00	0.10	N/A
19 - OutletName19	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
20 - OutletName20	Off	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
21 - OutletName21	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
22 - OutletName22	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
23 - OutletName23	Off	☐	CB1	0.00A	117.5V	0.00	0.02	N/A
24 - OutletName24	On	☐	CB1	0.00A	117.5V	0.00	0.02	N/A

On Off Reset

Status – Alarms

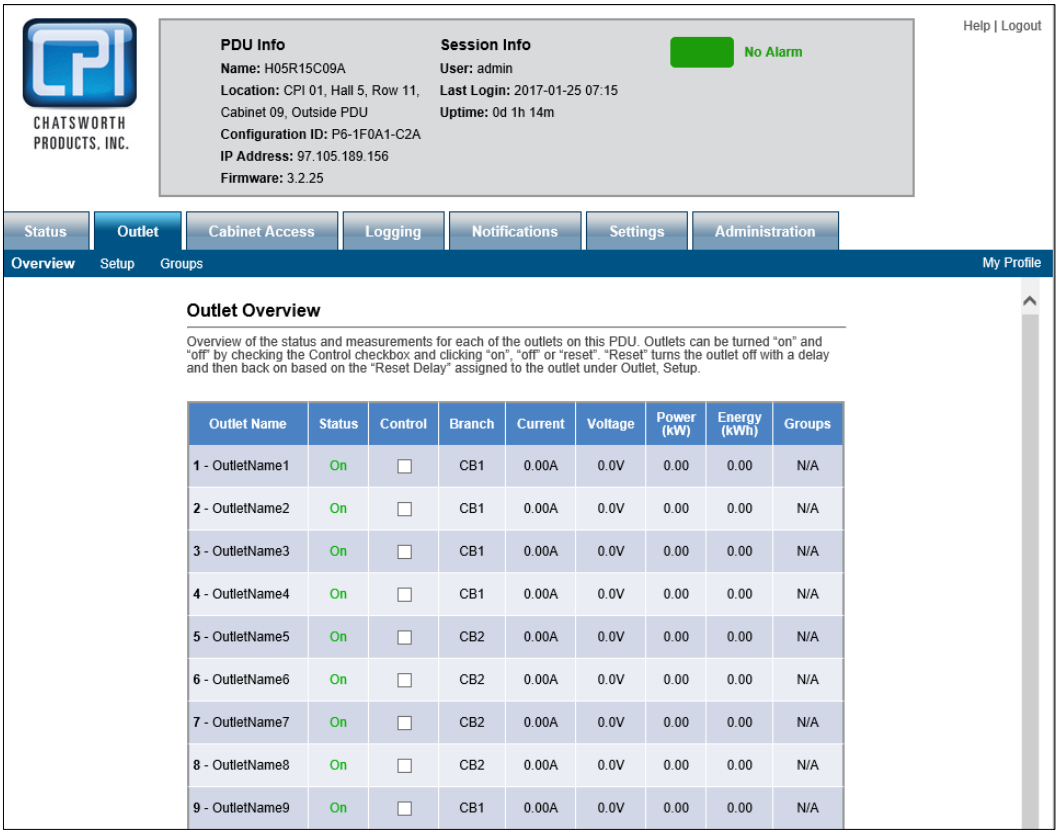
Click on Alarms to view a summary of Alarm messages, if there are any present:

Warning thresholds are indicated by a yellow-colored rectangular alarm status symbol. Critical thresholds are indicated by a red-colored rectangular alarm status symbol.

The ACK buttons can be used to acknowledge that an alarm is present. By acknowledging an alarm, the yellow or red status indicator next to the PDU's display (see page 22) will stop blinking and notification for this particular alarm will no longer be sent out through SNMP. The alarm remains present in the Alarms Status page while the alarm is active. The ACK feature is recommended when the customer is aware of the alarm and in the process of resolving it, and does not want to be notified by the PDU any longer.

Outlet – Overview

Monitored Pro (P4-XXXXX & L4-XXXXX), Switched (P5-XXXXX & L5-XXXXX) and Switched Pro (P6-XXXXX & L6-XXXXX) models, Click on Outlet, Overview tab to view Outlet Status on the PDU:



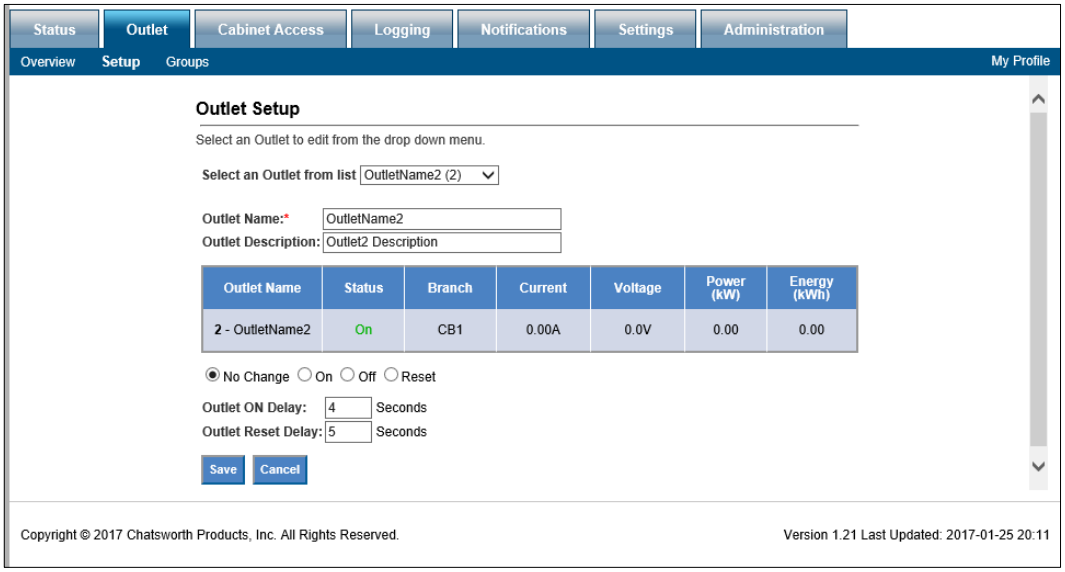
Outlet Name	Status	Control	Branch	Current	Voltage	Power (kW)	Energy (kWh)	Groups
1 - OutletName1	On	☐	CB1	0.00A	0.0V	0.00	0.00	N/A
2 - OutletName2	On	☐	CB1	0.00A	0.0V	0.00	0.00	N/A
3 - OutletName3	On	☐	CB1	0.00A	0.0V	0.00	0.00	N/A
4 - OutletName4	On	☐	CB1	0.00A	0.0V	0.00	0.00	N/A
5 - OutletName5	On	☐	CB2	0.00A	0.0V	0.00	0.00	N/A
6 - OutletName6	On	☐	CB2	0.00A	0.0V	0.00	0.00	N/A
7 - OutletName7	On	☐	CB2	0.00A	0.0V	0.00	0.00	N/A
8 - OutletName8	On	☐	CB2	0.00A	0.0V	0.00	0.00	N/A
9 - OutletName9	On	☐	CB1	0.00A	0.0V	0.00	0.00	N/A

On Switched (P5-XXXXX & L5-XXXXX) and Switched Pro (P6-XXXXX & L6-XXXXX) models, you can turn outlets on or off by clicking the checkbox under the Control column. The indicator in the Status column will change as the outlet switches on or off.

Scroll down to view the rest of the Outlets.

Outlet – Setup

To name and enter alarm limits for a specific Outlet, from the **Outlet** tab, click on the **Set Up** sub menu, and use the drop down list to select the outlet:

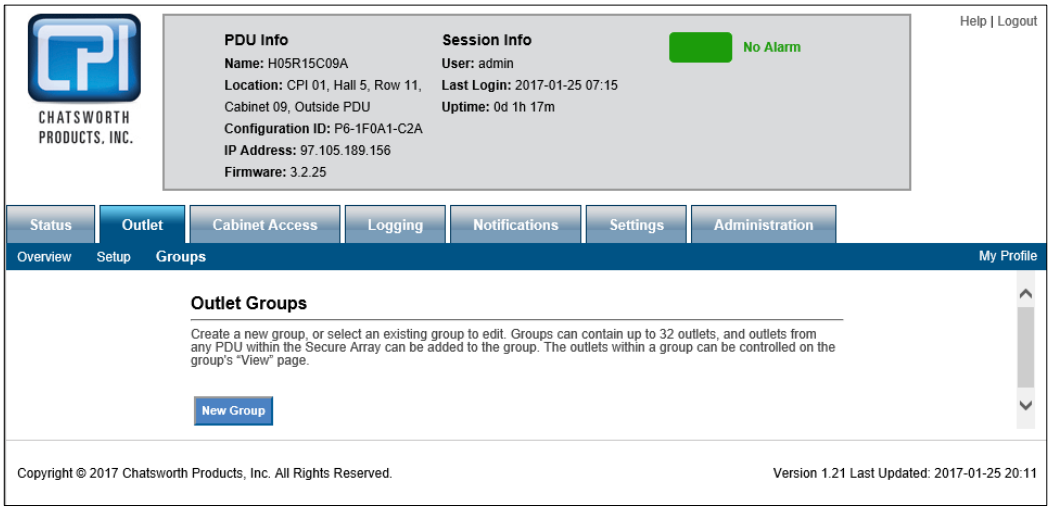


Switched (P5-XXXXX & L5XXXXX) and Switched Pro (P6-XXXXX & L6-XXXXX) models include settings for Outlet ON Delay and Outlet Cycle Delay, allowing you to specify a delay when power is cycled.

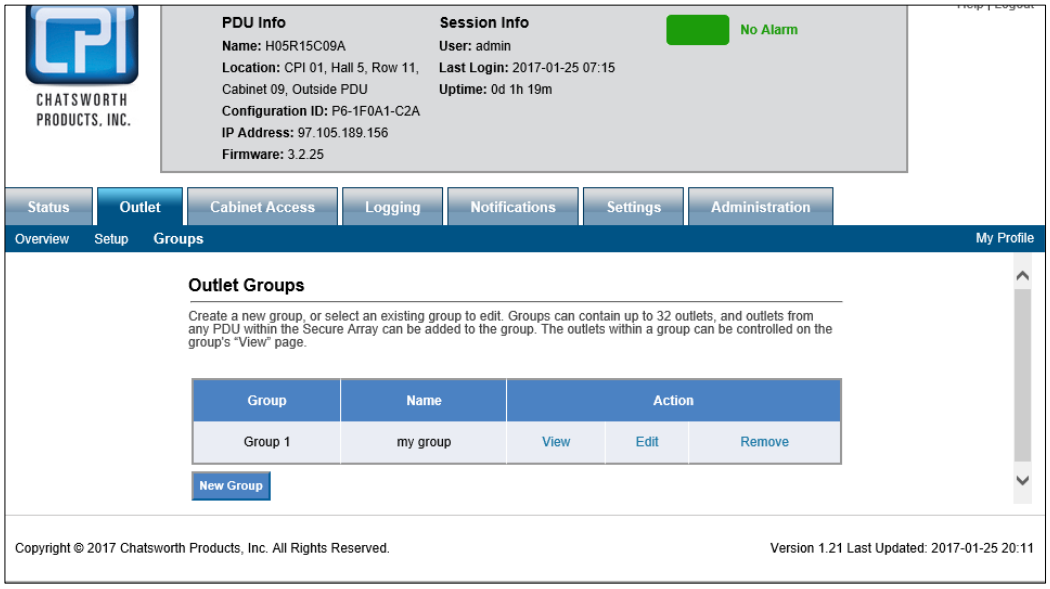
Enter Outlet data and click on **Save** button to save new data.

Outlet – Groups

To create a group of outlets from a single PDU or multiple PDUs that are linked together, click on the **Outlet** tab, **Click on the Groups** sub menu, **Click on New Group**:



Name the Group, select PDU(s) and Outlets to be grouped and click on **Save** button:

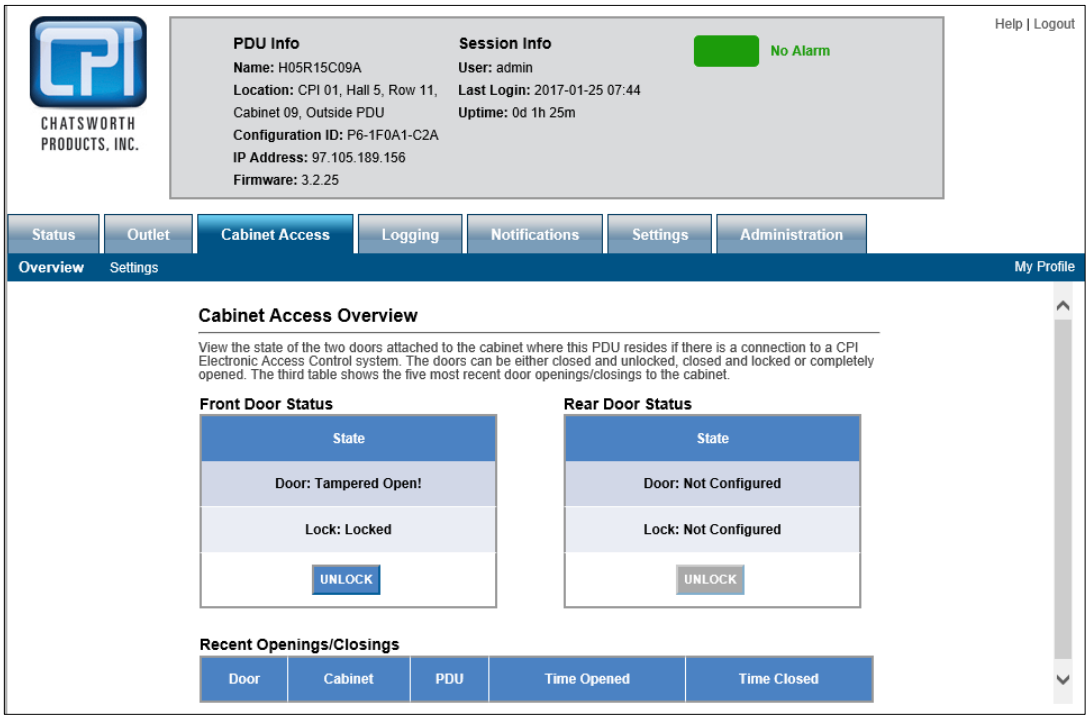


To view, edit or remove an existing group, click on **View or Edit or Remove** under Action in the Outlet, Groups table:

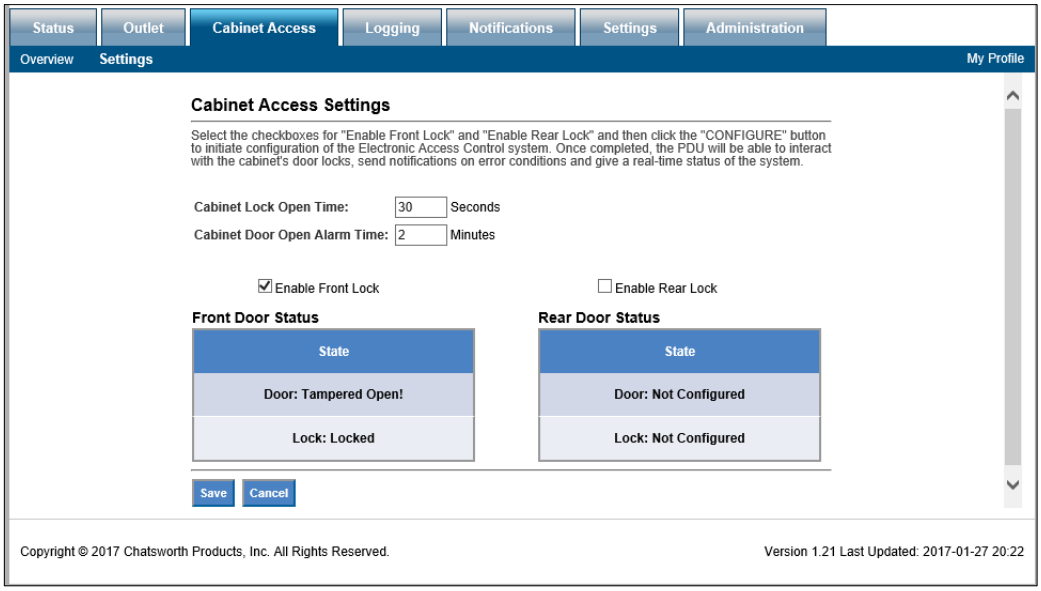
View provides Group Status. You can see totals and control outlets on Switched and Switched Pro.

eConnect Cabinet Access Control – Overview

*Only applicable for Vertical eConnect PDUs with Auxiliary Ports. Go to page 58 to jump to Logging tab.

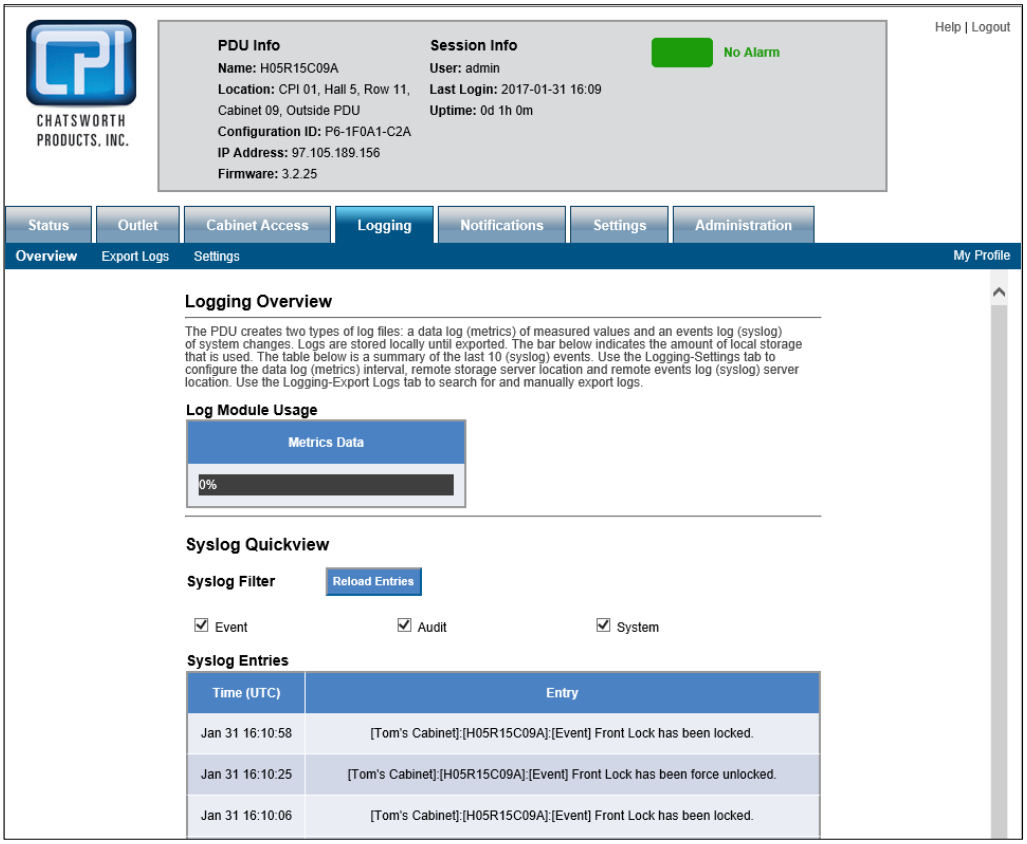


Cabinet Access – Settings



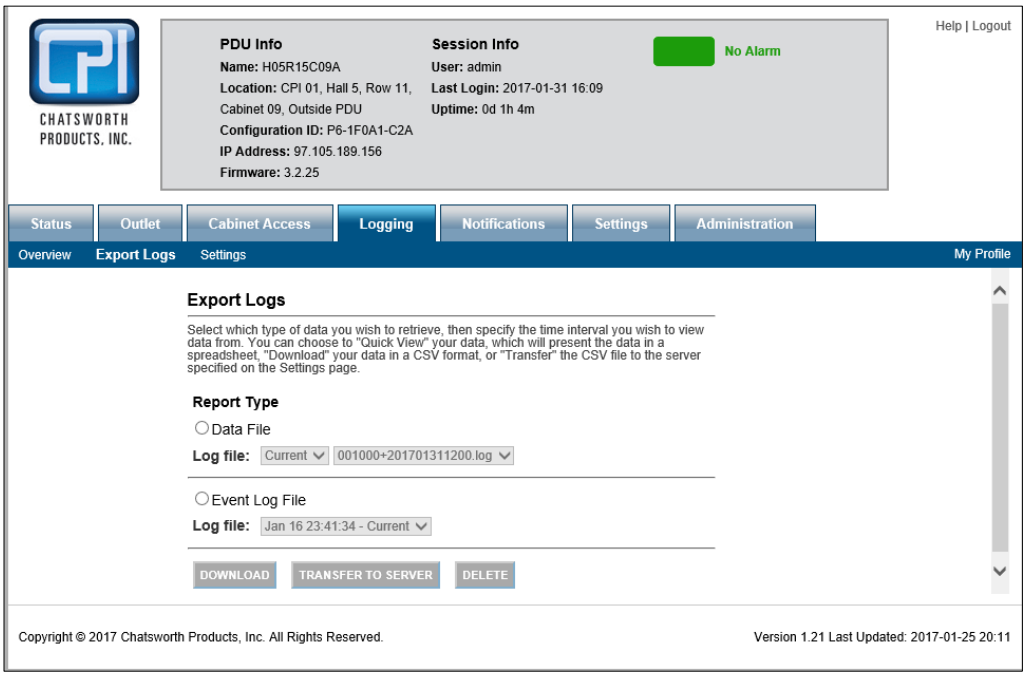
Enter the **Cabinet Lock Open Time**: 1 – 30 seconds. The default value is 5 seconds
Enter **Cabinet Door Open Alarm Time**: 1 – 240 mins. The default value is 10 minutes
Check box to enable Front or/and Rear Lock(s) where applicable
Click on **Save** to save the configured data.

Logging – Overview



Select Syslog Filter by checking the check box(es) and click on the **Reload Entries** button to obtain up-to-date information.

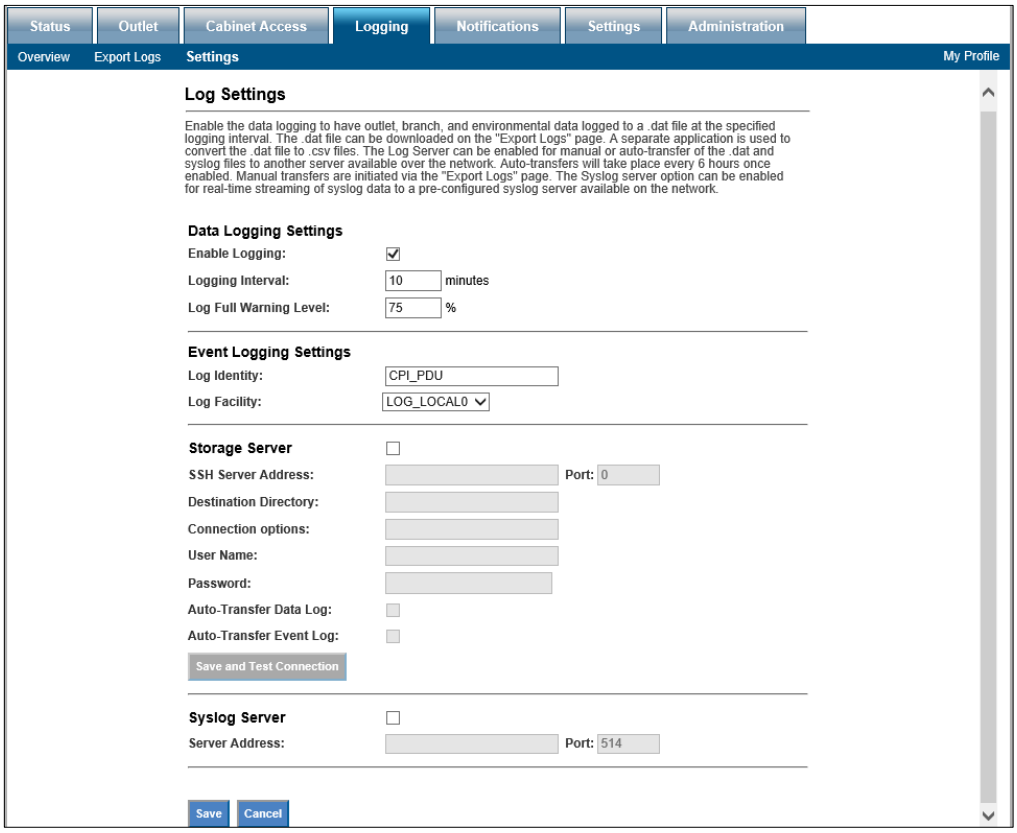
Logging – Export Logs



Select type of file and select the log file to be exported.

Click on DOWNLOAD to download selected file to the connecting computer.
Click on TRANSFER TO SERVER to save the file on the designated storage server.
Click on DELETE to remove the save file from the PDU.

Logging – Settings



Metric Data Logging:

Check Enable Logging check box to begin capturing data on the PDU internal memory. Input the desired interval and Log Full Warning Level percentage.

Event Logging Settings:

Log Identity and Log Facilities are preset on the PDU memory system. Pick any Log Local to store data locally.

Storage Server:

Input information for Data Log and Event Log to be stored remotely. Make sure to click on the **Save and Test Connection** button to validate the connection and authorization to save data on the remote server.

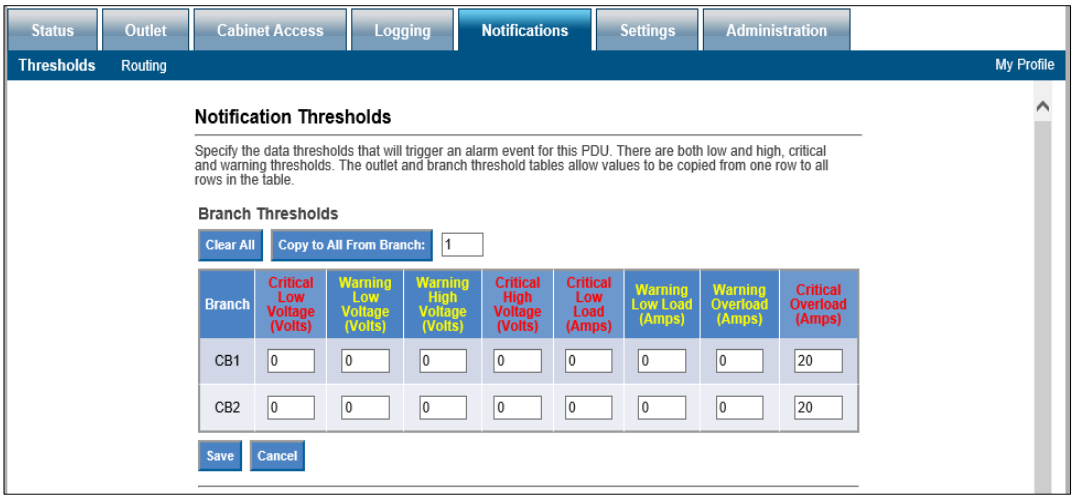
Syslog Server:

Allows the use of the remote server as the Syslog instead of the PDU itself.

Click on **Save** to save all input data.

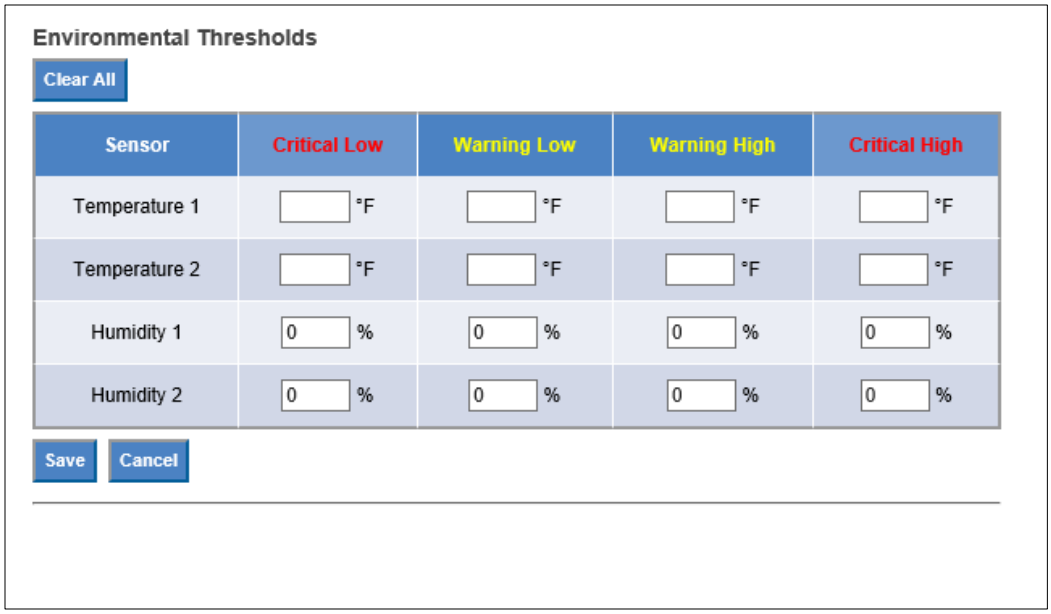
Notification - Thresholds

Branch Thresholds



Input all desired limitations to be set as thresholds. Click on **Save**.

Scroll down to input other thresholds.

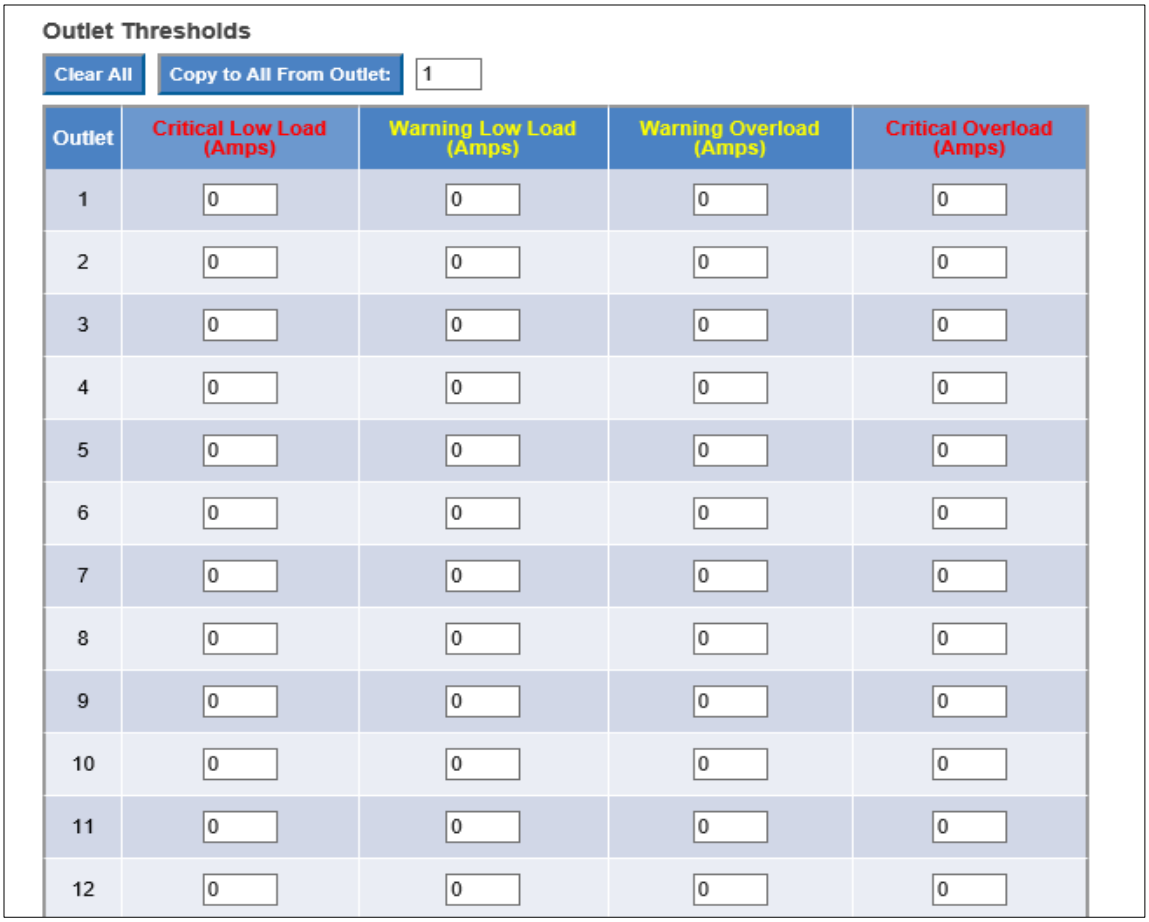


Environmental Thresholds

Input all desired limitations to be set as thresholds. Click on **Save**.

Scroll down to input other thresholds.

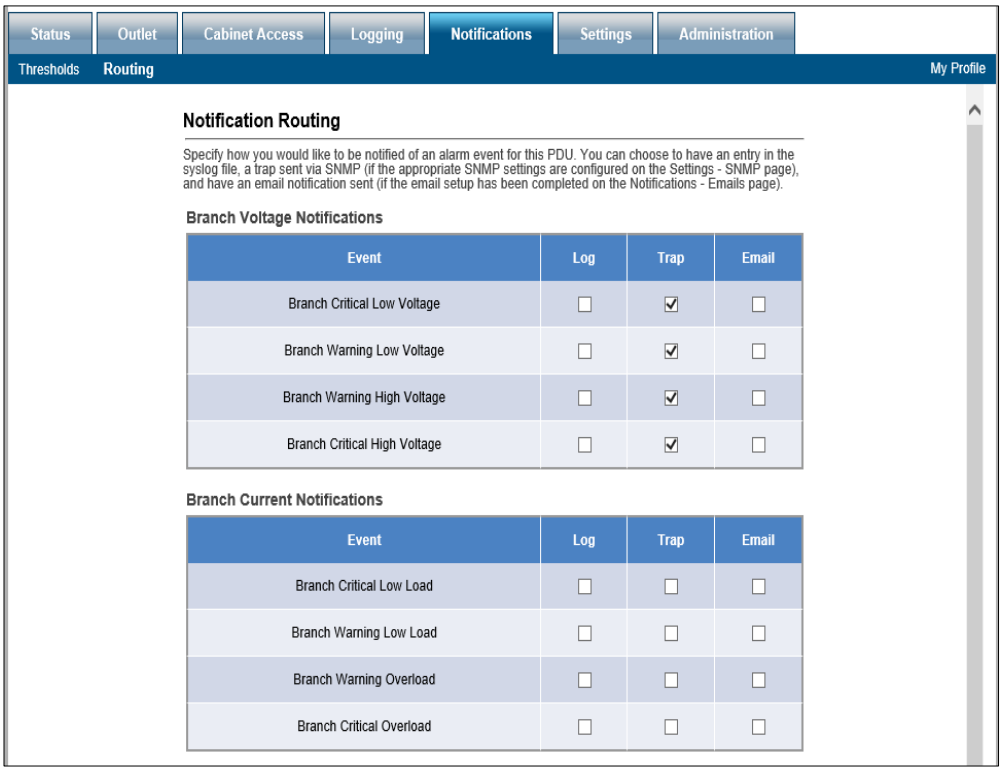
For P4-xxxxx, L4-xxxxx, P6-xxxxx, L6-xxxxx PDU models only:



Outlet Thresholds

Input all desired limitations to be set as thresholds. Click on **Save**.

Notification - Routing



Select method(s) of notifications for Branch Voltage and Branch Current by checking the check box(es): Log, Trap, Email

Scroll down for more notification settings.

Outlet Current Notifications

Event	Log	Trap	Email
Outlet Critical Low Current	☐	☐	☐
Outlet Warning Low Current	☐	☐	☐
Outlet Warning High Current	☐	☐	☐
Outlet Critical High Current	☐	☐	☐

Temperature Notifications

Event	Log	Trap	Email
Temperature Critical Low	☐	☐	☐
Temperature Warning Low	☐	☐	☐
Temperature Warning High	☐	☐	☐
Temperature Critical High	☐	☐	☐

Humidity Notifications

Event	Log	Trap	Email
Humidity Critical Low	☐	☐	☐
Humidity Warning Low	☐	☐	☐
Humidity Warning High	☐	☐	☐
Humidity Critical High	☐	☐	☐

Select method(s) of notifications for Outlet, Temperature, Humidity if applicable by checking the check box(es): Log, Trap, Email.

Scroll down for more notification settings.

Door and Lock Notifications

Event	Log	Trap	Email
Badge Scanned and Verified	☑	☑	☑
Badge Scanned and Not Verified	☑	☑	☑
Door Opens or Closes	☑	☑	☑
Lock Opens or Closes	☑	☑	☑
Door Open Longer than Alarm Period	☑	☑	☑

PDU Notifications

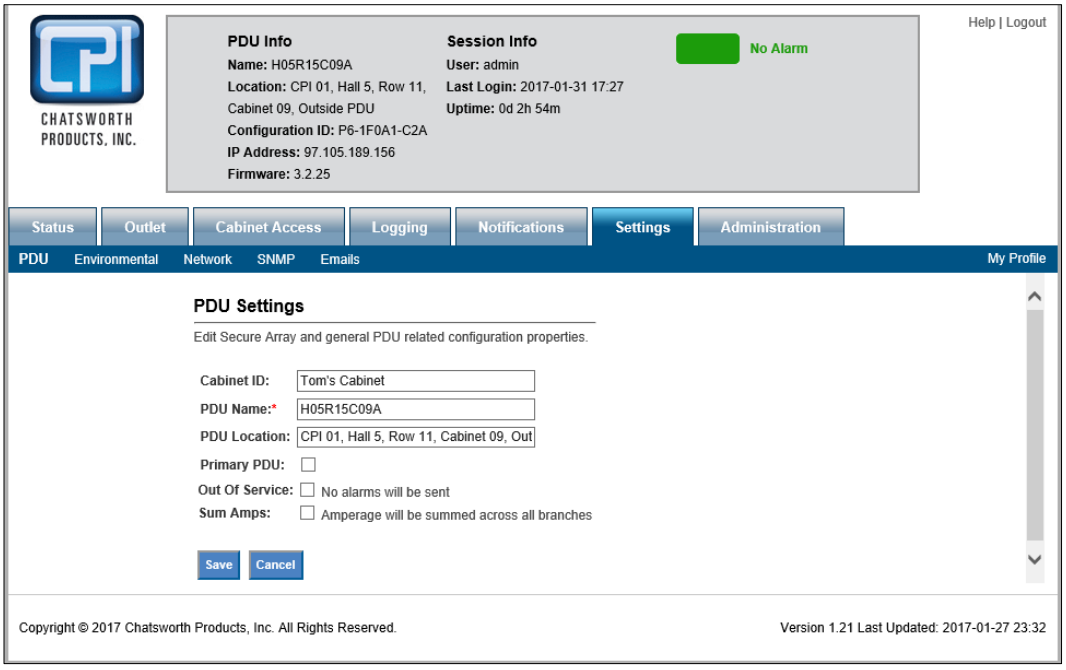
Event	Log	Trap	Email
PDU Firmware Update Applied	☐	☐	☐
PDU Configuration Change	☐	☐	☐
PDU Receptacle Change	☐	☐	☐
PDU System Reboot	☐	☐	☐
PDU Accessed	☐	☐	☐
Secure Array State Change	☐	☐	☐
	☐ Select All	☐ Select All	☐ Select All

Save Cancel

Select method(s) of notifications for Door, Lock , and PDU if applicable by checking the check box(es): Log, Trap, Email.

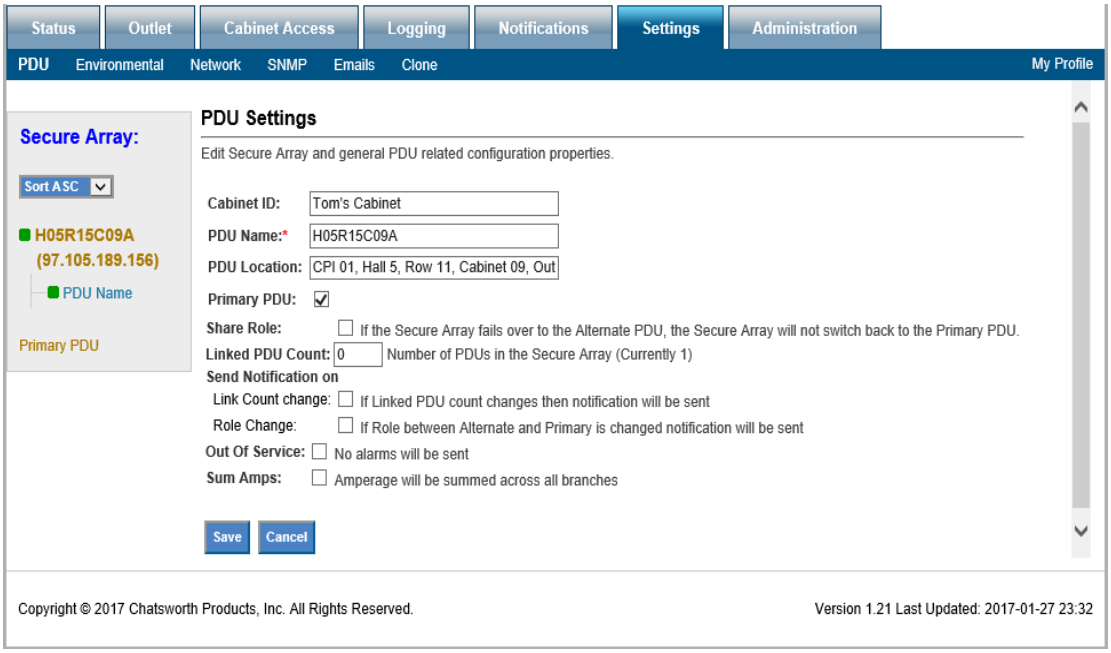
Click on Save to save the input data.

Settings – PDU



Enter desired **PDU Name** and **Location**. The PDU Name is displayed in the summary information at the top of each web interface screen and on the PDU's LCD screen.

Out of Service checkbox: Check this box to deactivate alarms if a PDU goes offline or becomes "unlinked." Use this checkbox for planned service.



Primary PDU checkbox: eConnect PDUs can be linked together through a Secure Array to share a single IP address through a single network connection. Check this box for the PDU with the highest level functionality. For several PDUs that have the highest level of functionality, check the box for the one that has the highest number of outlets. The check box for Primary PDU should only be checked if this PDU is linked with other PDUs, and if this is the PDU that is attached to the network. If this PDU is not linked to other PDUs, do not check the Primary PDU check box.

Remote cabinet access control through eConnect EAC is possible with all the PDUs that are linked together in the Secure Array.

Share Role checkbox: When linking PDUs, there can also be an Alternate (Primary) PDU to provide a backup network connection if the Primary PDU loses its network connection. Check this box to allow the Alternate PDU to keep the “primary” network connection role after the Primary PDU returns to normal service. Uncheck to switch the primary network connection back to the Primary PDU.

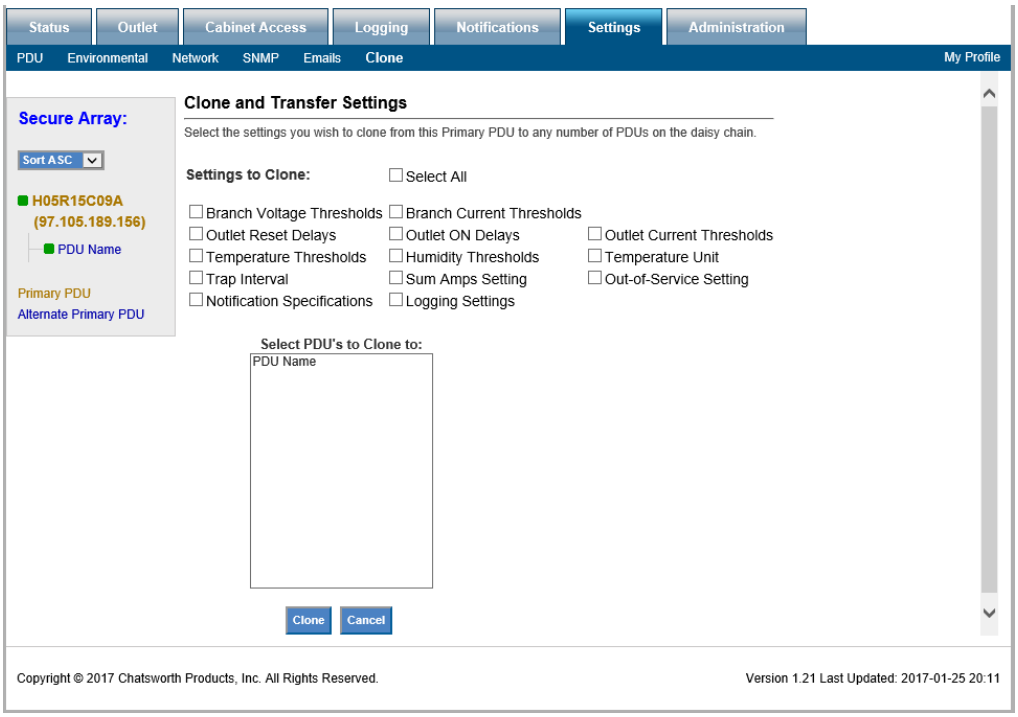
To keep cabinet access control entries, make sure the Key Card ID information on both the Primary and Alternate PDU in case the role of the Primary PDU changes.

Link Count Change checkbox: Check this box to receive an alarm notification if the number of PDUs in the Secure Array changes indicating a potential link failure.

Role Change checkbox: Check this box to receive an alarm notification if the Alternate PDU assumes the Primary PDU role indicating a potential primary PDU or network connection failure.

Fill in the desired choices and click on **Save**.

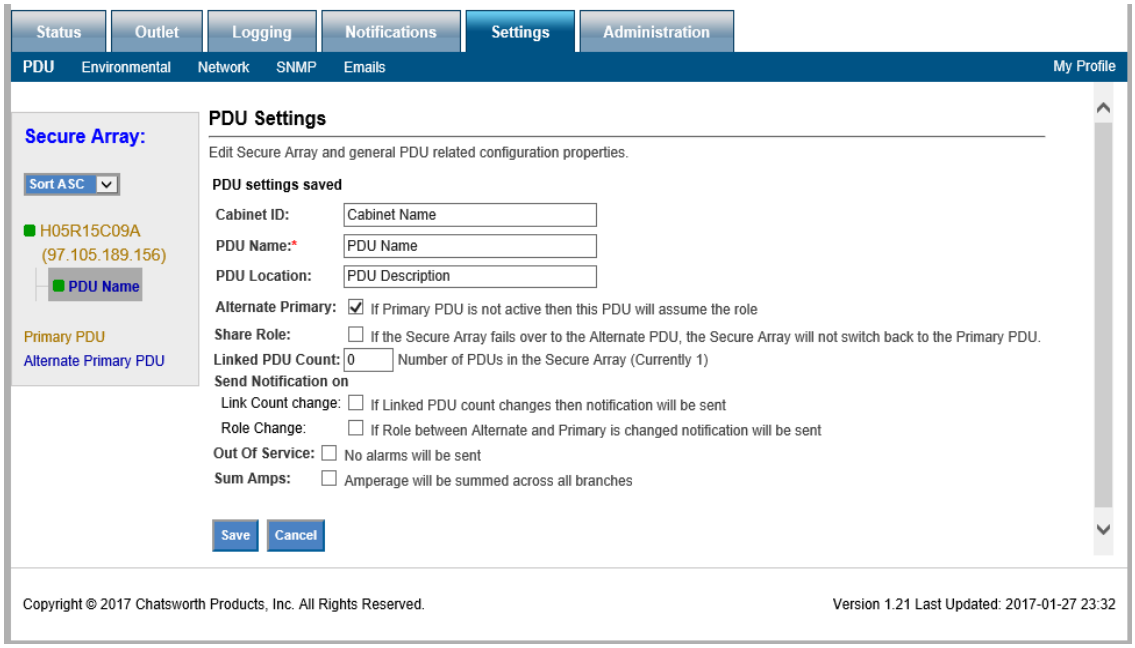
Settings – PDU - Clone



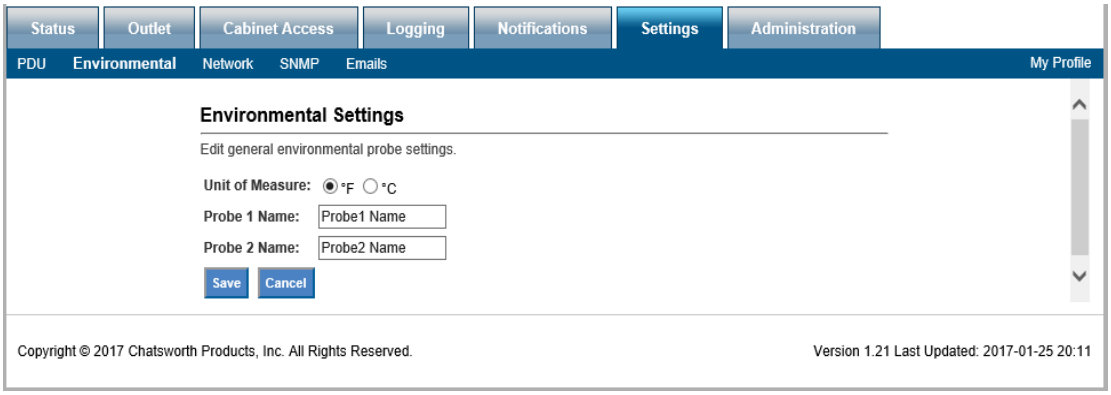
Data from the Primary PDU can be cloned to the other PDUs in the Secure Array by checking the desired parameters and selecting the PDUs to be cloned.

You can designate one of the linked PDUs as an Alternate PDU. The Alternate PDU serves as a backup to the Primary PDU. It has a second and separate network connection from the Primary PDU and assumes the Primary role, providing a network connection to the PDUs in the array, if the Primary PDU loses connection. The Alternate PDU must be equivalent to the Primary in functionality and outlet quantity in order to fully support the array. Additionally, if deploying eConnect EAC, the Alternate PDU must have the same user access information (ID card) from the primary PDU in order for the access logging information to show up in the GUI.

Check the Alternate Primary check box, fill in the desired choices and click on **Save**.

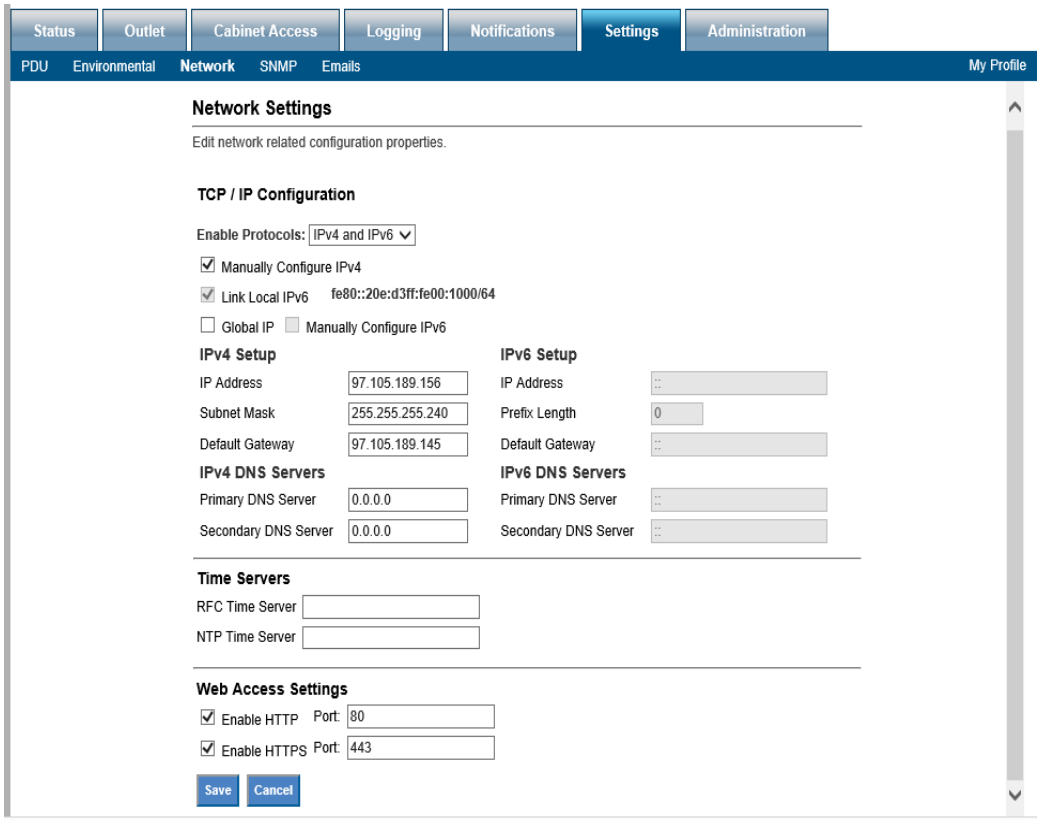


Settings - Environmental



Select choice of temperature unit, enter name for the probes. Click on **Save**.

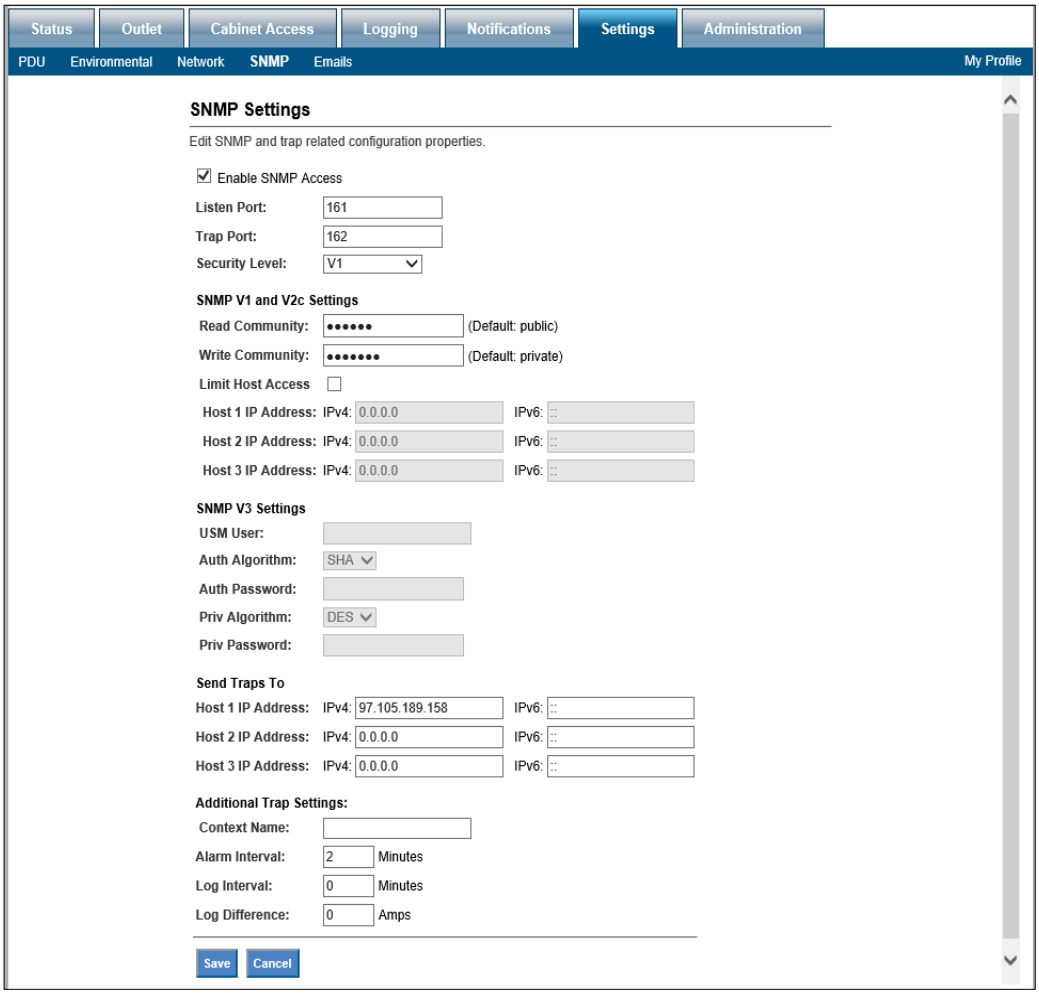
Settings – Network



- **Network** - Using the Enable Protocols combo box, select the Network Protocol(s). Enter data for IPv4 and/or IPv6 Networking.
- **Time Servers** – Designate a time server as the source for time after each reboot (requires a network connection). As an alternative, you can manually set the time from the Administration tab, Advanced sub menu.
- **Web Access Settings** –Designate the port for accessing the PDU using a web browser and HTTP or HTTPs.

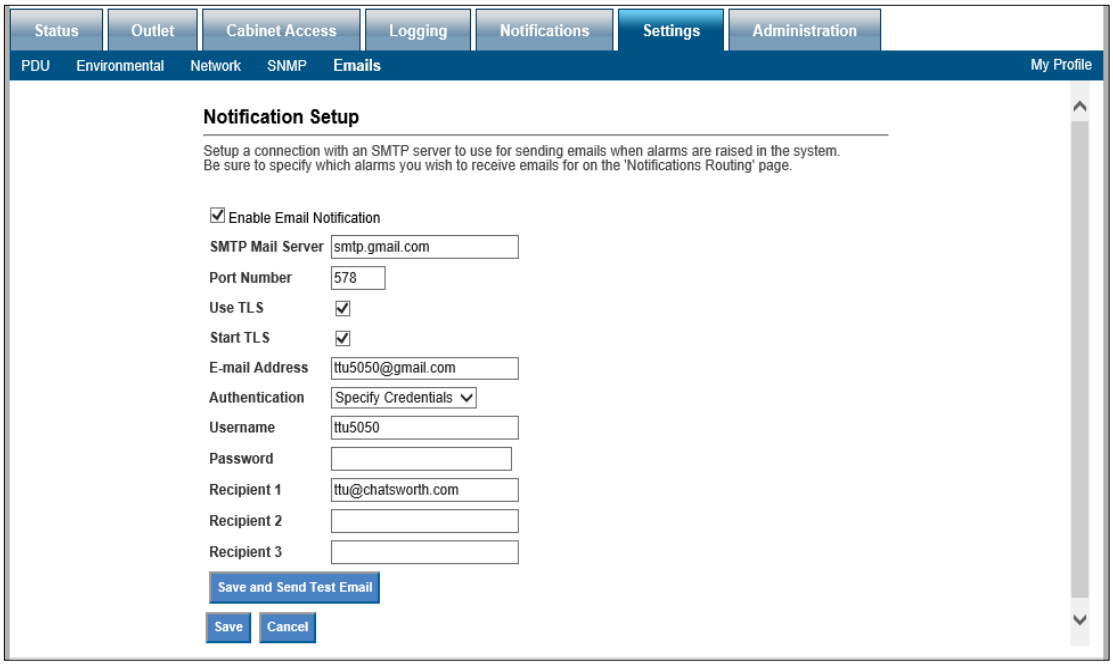
Click on **Save**.

Settings – SNMP



Enter data for SNMP v1, v2c or v3 settings.
Enter the IP Addresses you want to send traps to.
Click on **Save** to save all entered data.

Settings – Emails

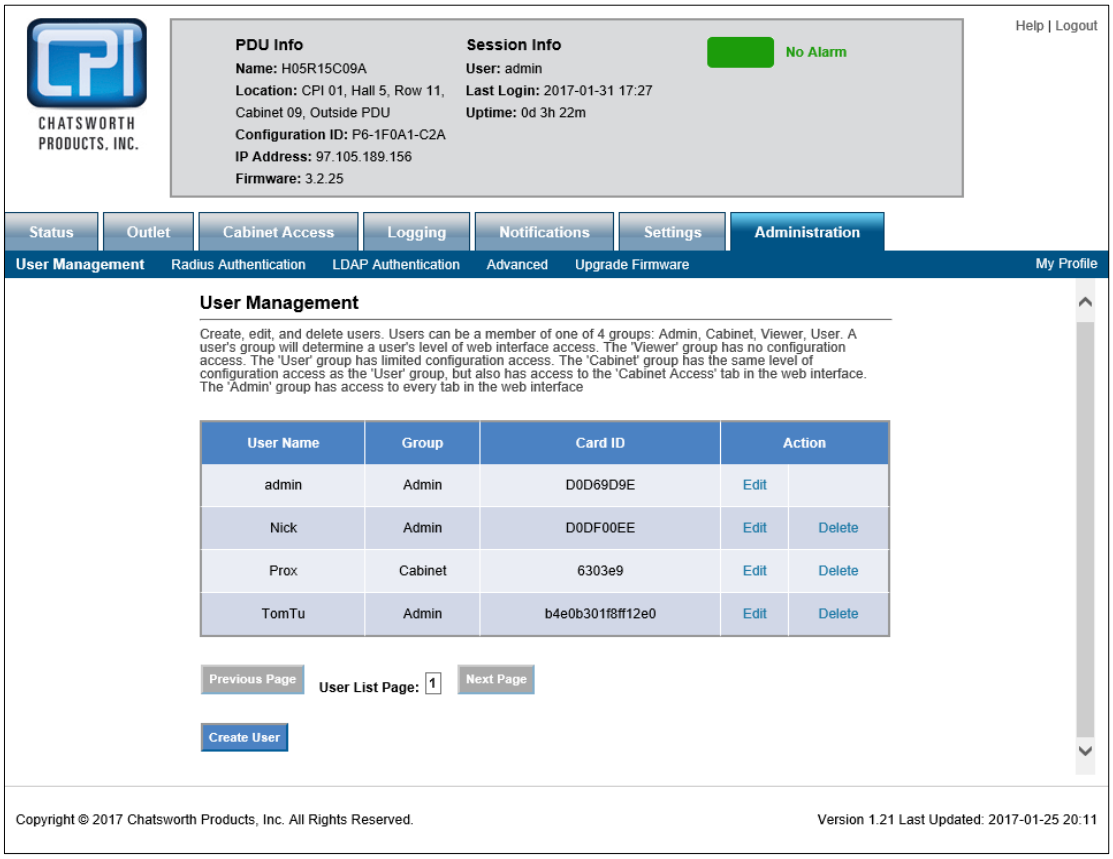


The PDU does not include a mail server. In order to provide email notifications for the PDU, you must first setup an email account for the PDU on an accessible mail server.

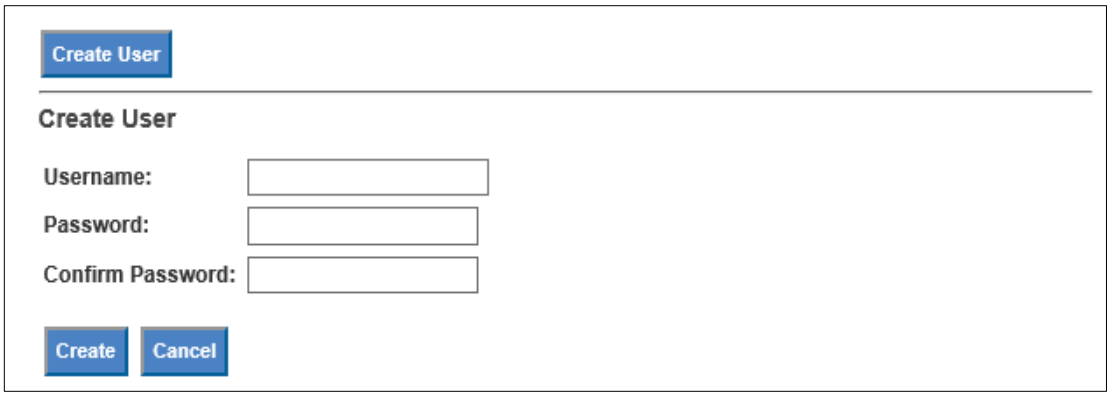
- **SMTP Mail Server** – the mail server where the account resides, ex: smtp.google.com.
- **Port Number** – the provider's port number, usually 465 or 25.
- Check Use **TLS** or **Start TLS** check box(es) to match your provider's encryption requirements.
- **Email address –** the email address assigned to the PDU
- If Authentication is required, select **Specify Credentials** from the drop down list.
- Enter the **User Name** and **Password** for the Email account.
- Select **Anonymous** if no Username and Password are required.
- Enter the email address(es) of the Recipient(s) (eg: your technician's email address.)

Click on **Save and Send a Test Email** to make sure notification setup is correctly. The PDU must have network access to the mail server.

Administration – User Management

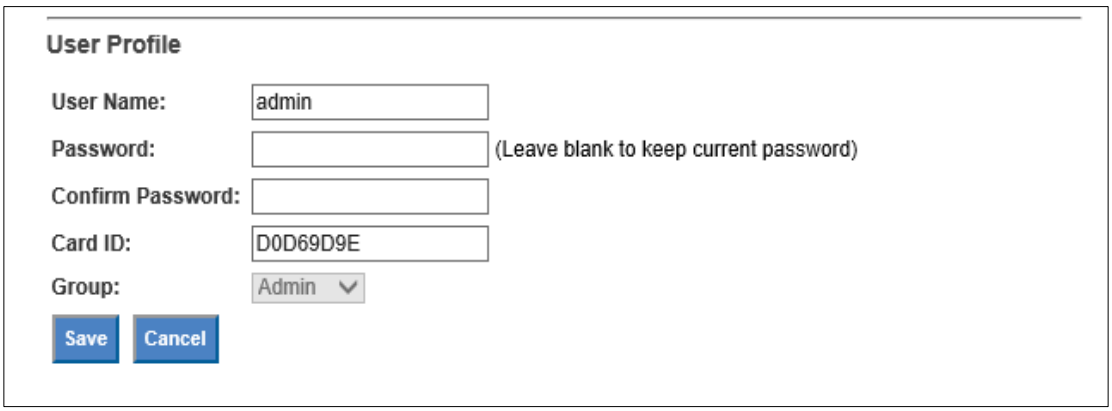


Click on **Create User** to add a new user.



Input the username and password and click on **Create**.

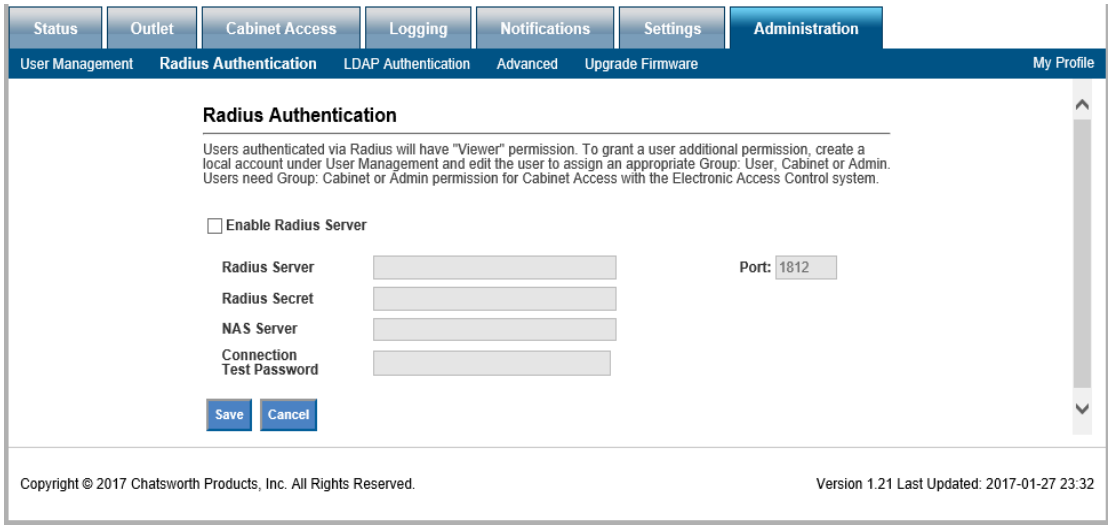
To edit an existing user. Click on **Edit** for that username.



Change the necessary information. Input the Key Card ID for the Electronic Access Control. If you don't know your Key Card ID, see Appendix on Page 80. The same information should be input for both the Primary and Alternate PDU to assure the same logging authority will be carried through.

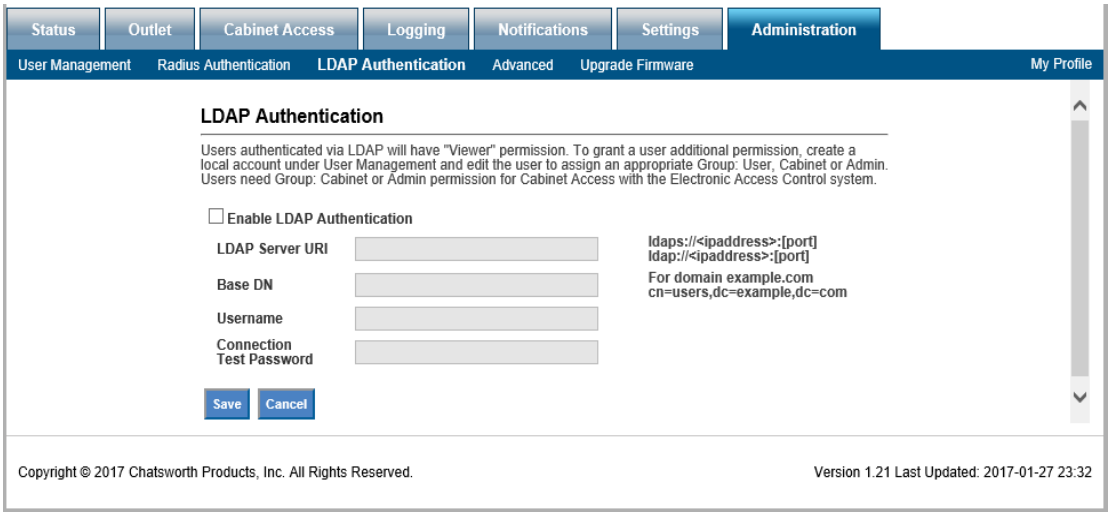
Click on **Save**.

Administration – Radius Authentication



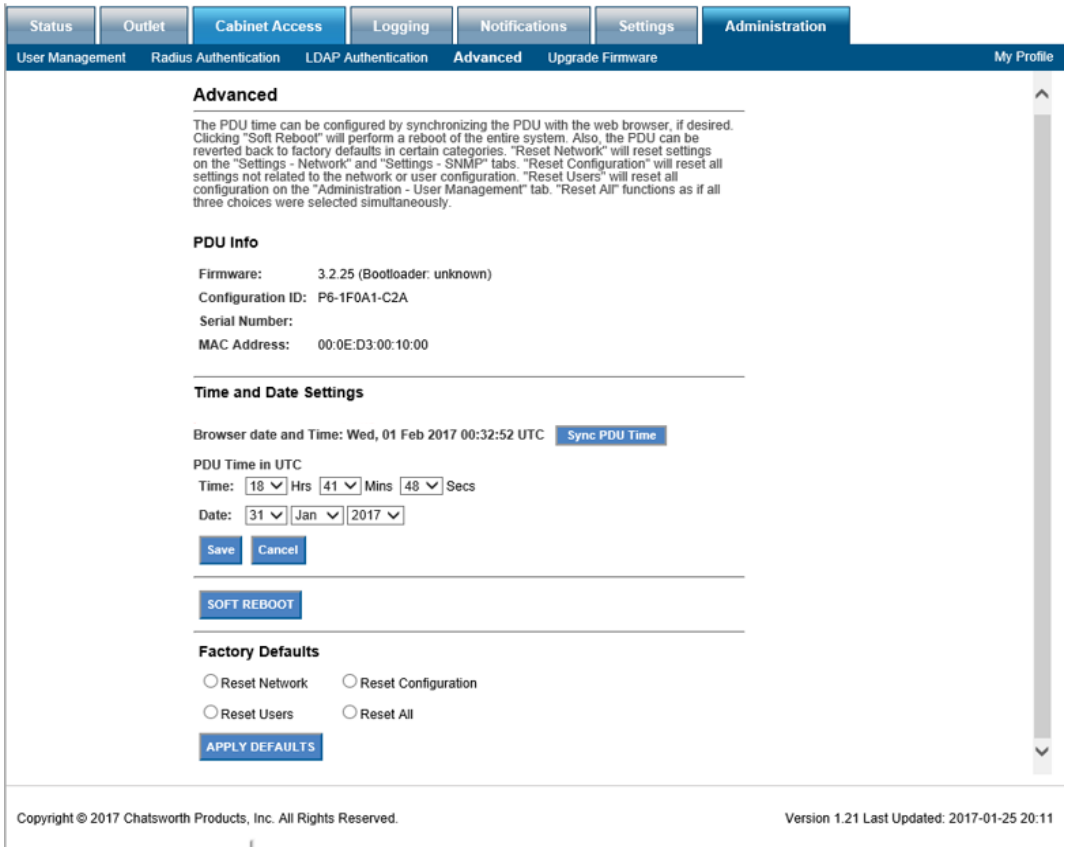
For network/website authentication using **Radius Authentication**, enter the necessary information and **Save**. Note that users will need to be added under the **Local User List** to have **Control** or **Admin** capabilities.

Administration – LDAP Authentication



For network/website authentication using LDAP Authentication, enter the necessary information and Save. Note that users will need to be added under the **Local User List** to have **Control** or **Admin** capabilities.

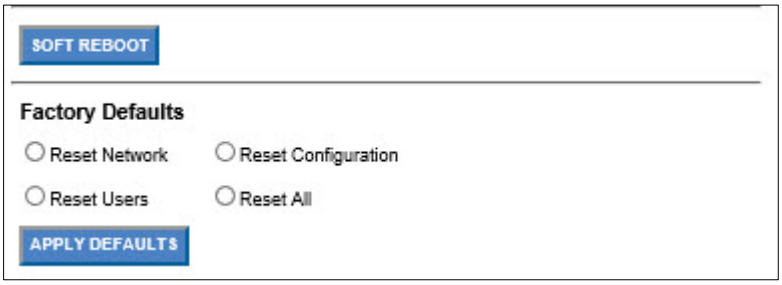
Administration – Advanced



PDU Info includes serial number and MAC address. Model number and firmware version are also displayed in the gray summary box at the top of each screen.

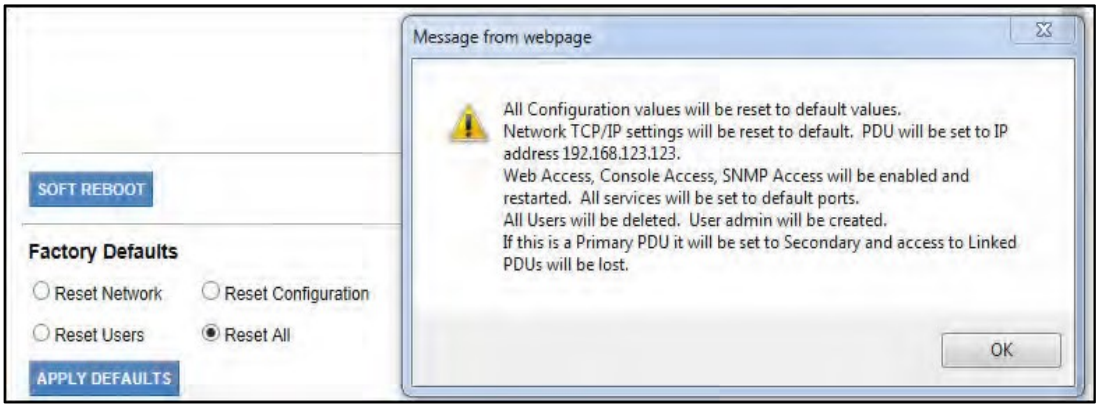
Verify the **Time** and **Date Settings** to ensure date/time stamps on logs and alarms are correct.

Soft reboot restarts the network connection, but does not power down outlets. Use this if you have connection problems.



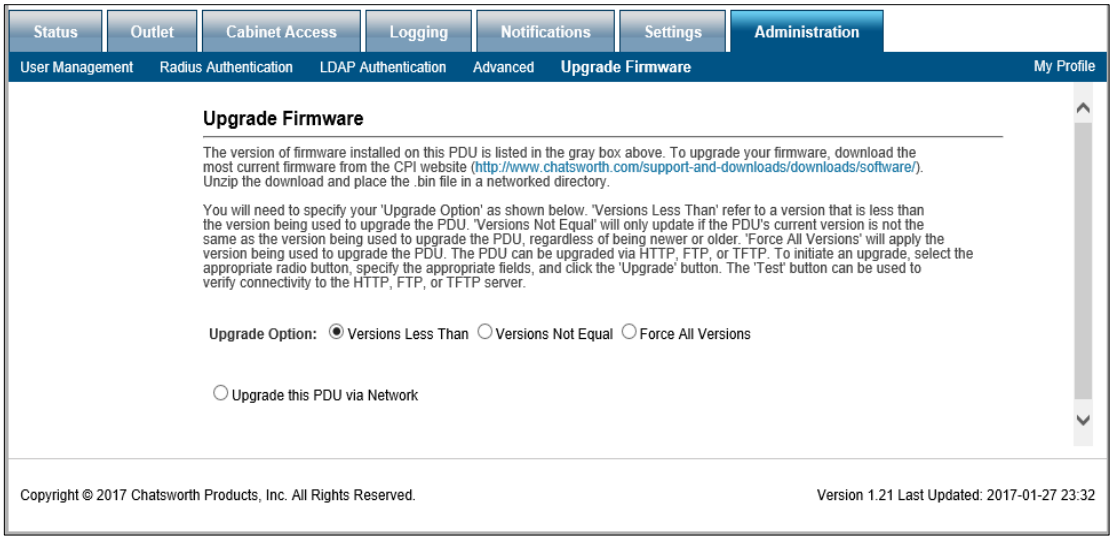
Factory Defaults reset customer-entered values to the original factory defaults:

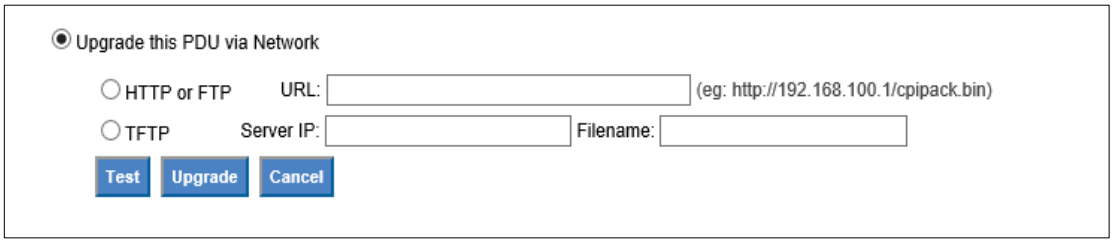
- **Reset Network** – Resets the PDU Network information to factory defaults including IP address (192.168.123.123). You may lose your network connection.
- **Reset Configuration** – Resets the PDU Configuration information to factory defaults including PDU name, alarms thresholds, etc. You will lose all configured fields.
- **Reset User** – Deletes all users except the single factory default admin user. Login will be reset to admin, admin and this user will have full admin capabilities.
- **Reset All** – Resets all fields to factory defaults.



To reset to factory defaults, select the appropriate radial button.
Review the warning message.
Click the **Apply Defaults** button to apply selected defaults. Resets are applied immediately.

Administration – Upgrade Firmware





Post the downloaded firmware to an accessible HTTP/FTP or TFTP directory.

Enter HTTP/FTP or TFTP data.
Click on **the Test** button to assure the remote site can be reached.
Click on the **Upgrade** button to perform the upgrade.

After successful installation, the new firmware version will display in the PDU Info box at the top of the screen.

Additional Software

Note: Linked PDUs with firmware version 1.17.227 or later can be upgraded from the network (remotely) using eConnect Firmware Upgrader, a separate software program available from www.chatsworth.com/Support-and-Downloads/Downloads/Software.

Note: eConnect PDUs can also be monitored and configured using a direct serial connection with eConnect Serial Communicator, a separate software program available from www.chatsworth.com/Support-and-Downloads/Downloads/Software. A Serial Setup Cable (CPI P/N 35941-131) is also required.

USING THE APPLICATION PROGRAMING INTERFACE (API)

Refer to this link to get API instructions
Additional information about API Best Practices refer to
https://bocoup.com/blog/documenting-your-api

TROUBLESHOOTING GUIDE

Local display is blank:

- Check the PDU status LED.
- Make sure the PDU is plugged into a live source.
- Timeout feature might be activated, press the middle button.

Receptacle has no power:

- Check the circuit breaker for the branch. If necessary, switch it off then back on and recheck. (Note that all equipment connected to the branch will lose power.)
- Check power at the source.
- If problem persists, the PDU unit must be replaced.

PDU cannot establish Link to another PDU:

- Verify that proper cable is used to interface PDUs, use a standard Cat 5/6, 4-pair network cabinet with RJ45 connectors on both ends.
- Make sure the connectors are snapped in securely.
- Verify the integrity of the cable.
- If problem persists after a power cycle, the PDU unit must be replaced.

PDUs in the Secure Array are not displaying in the interface:

- Verify that the PDU models are compatible.
    - Models with auxiliary ports will only connect to models that support Gigabit Ethernet.

PDUs in the Secure Array are not displaying data that is appropriate to their level of functionality:

- Verify that the PDUs assigned to the PRIMARY and ALTERNATE roles are represented by the units with the highest level of functionality within the array.
- If the problem persists, verify that the units in the PRIMARY and ALTERNATE roles have the highest number of outlets within their functionality.

No Ethernet Connection:

- Verify connection with a ping tool from any computer in the network.
- Check that the green LED in the PDU Ethernet port is lit.
- Check that the end connectors are snapped in place.
- Check the integrity of the cabling from the PDU's Ethernet port to the network switch/hub/router.
- Verify the port integrity of the network switch/hub/router.
- Verify via serial port that the network configurations for the PDU are set properly.
- If the Ethernet communication problem persists after power cycling it, replace the PDU unit.

For eConnect PDU with EAC installed:

<u>Lock issue</u>

If lock status shows as "Not Configured" or "Lost Communication"

- Check the cable that is connecting the lock to the CAN bus module for continuity.
- Check the cable that is connecting the CAN bus module to the PDU for continuity.

If lock status shows as "Unlocked"

- Check that the lock is locked using the appropriate mechanical key
- Check the cable that is connecting the lock to the CAN bus module for continuity.

<u>Door issue</u>

If door status shows as "Not Configured" or "Lost Communication"

- Check the cable that is connecting the door sensors with the CAN bus module for continuity.
- Check the cable that is connecting the CAN bus module to the PDU for continuity.

If door status shows as “Open” while the door is closed:

- Check that the door magnets are aligned properly.

Check that the cable that is connecting the door magnets with the CAN bus module for continuity.

Customer Support:

US Tech Support: 1-800-834-4969 • techsupport@chatsworth.com

APPENDIX

Regulatory Information:

ETL
CE
FCC Part 15, Class A
EN 55022
RoHS Compliant
UL &
cUL
Listed
IEC
60950-
1
CSA C22.2

Environmental Conditions:

Operating Temperature: 32 - 149˚F (0 - 65˚C) at Input Power Rating (kW) Operating Relative Humidity: 5 - 95%
Operating Elevation: 0-10000 ft (0-3000 m)
Storage Temperature: -13 - 149˚F (-25 - 65˚C)
Storage Relative Humidity: 5 - 95%
Storage Elevation: 0-50000ft (0-15000 m)

The Technical Construction File is held by CPI.

APPENDIX for eConnect EAC

Assigning a Key Card ID

As discussed in the section **Administration – User Management** (page 71), each user may be assigned a unique key card ID associated with their account that allows the PDU to unlock eConnect EAC mechanism (if installed) when a key card is presented to the cabinet door lock. If the key card ID is not known, there are two methods that can be used to interrogate the card electronically, in order to retrieve the key card ID, and enter it into the eConnect system.

The first method utilizes the eConnect card reader and the event-logging system described in the **Logging – Overview** section of this manual to acquire the key card ID.

Whenever a key card is presented to eConnect EAC, the key ID is read off the card, and then is compared to all key IDs known by the eConnect system. If the key ID is unknown, an entry is appended to the syslog to show that cabinet access has been attempted by an unknown user. The log entry includes the unknown key card ID. The key card ID can then be read from the syslog, and then entered into a user profile.

To easily copy the card ID from the syslog, double click the last set of characters on the pertinent log entry with the left mouse button to highlight it, then click the right mouse button and select **Copy** (or press **Ctrl-C** on the computer keyboard) to copy the characters to the windows clipboard.

Syslog Entries

Time (UTC)	Entry
Feb 9 19:05:07	[PDU Cabinet]:[P6 lock tester]:[Audit] User admin logged in on the web GUI interface.
Feb 9 19:04:34	[PDU Cabinet]:[P6 lock tester]:[Audit] Front Door has encountered a failed access attempt. Card ID was caa4b301f8ff12a4

Next, find the user that will be associated with this card, or create a new user if necessary and add the user name and password and click save. Change the Group association for this user to the cabinet, place the mouse cursor on the Card ID text box and left click once, then paste the key card ID in with mouse right-click **Paste** (or via the keyboard by pressing **Ctrl-V)**. Be sure to press the **Save** button to save the key card ID.

From this point forward, the key card ID will be known to the system and associated with the user. Note that once the card ID is into the system, it will no longer be displayed in the syslog entry for security purposes.

The second method to interrogate an unknown key card is to utilize the pcProx® Plus external card reader, CPI part number 36653-001, and a windows-based computer that is logged on to the eConnect web interface. The external card reader plugs into any available USB port on the computer and will generate “keystrokes” when a card is presented. Thus, the user places the mouse cursor on the Card ID text box, and when the card is presented to the external reader, the key card ID characters are injected into the text box automatically, as if they were entered manually with a keyboard.

The external USB card reader does require software to be downloaded from the third-party vendor’s website, and configured to the type of key card intended to be used on the system. **NOTE:** At the time of writing of this manual, configurations have been tested for card types Desfire, HiD iClass, MIFARE Classic, and Prox cards. Other types of cards may be used with this reader, although some changes may need to be made to the external card reader settings so the key codes are correct. A comparison could be made between the syslog entry method described above to find the proper settings that provide a match for that family of cards. From that point forward, no changes to the external card reader’s configuration should be required to enroll more cards of the same type.

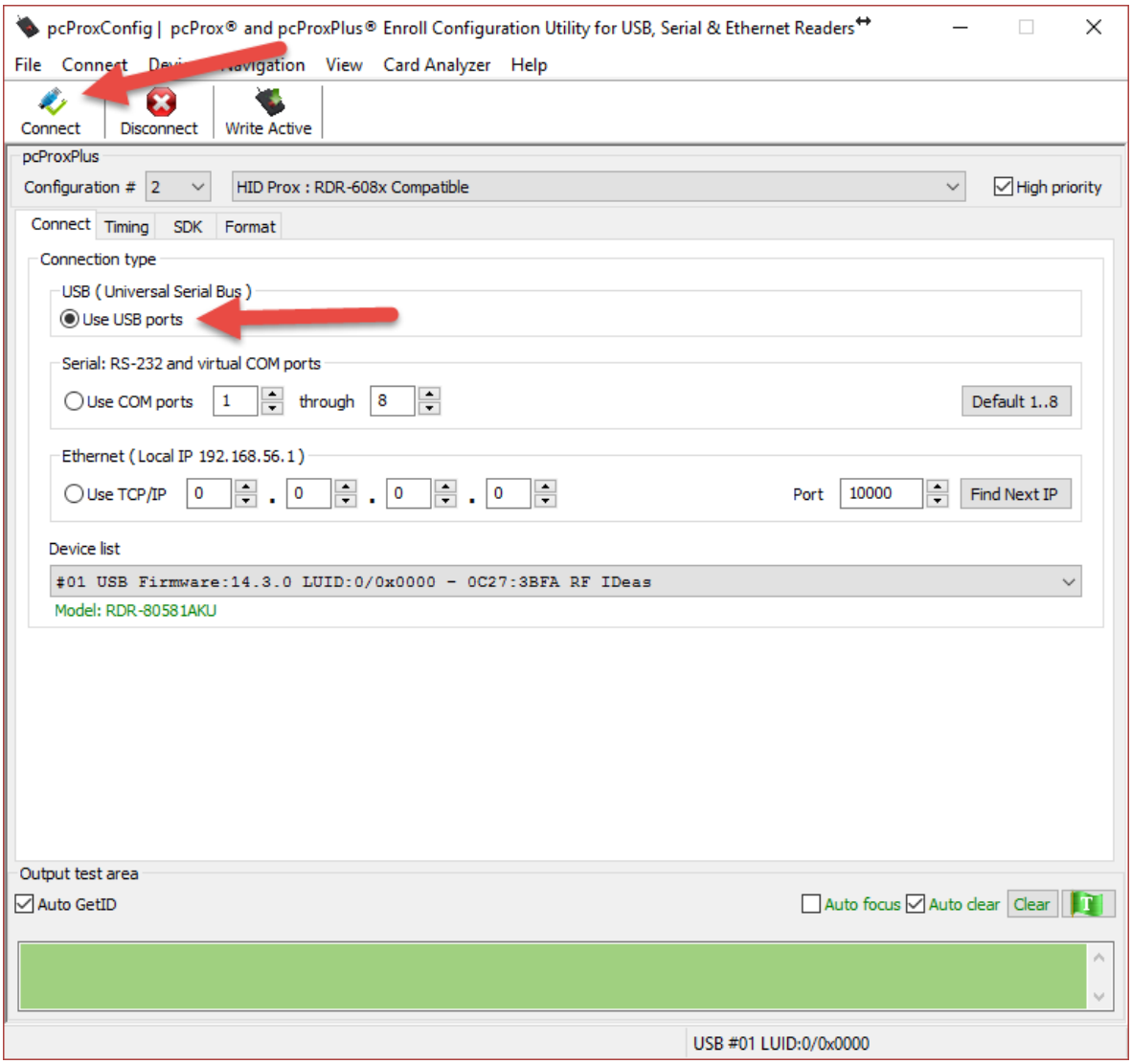
Preparation

To configure the pcProx® Plus card reader, you must have the pcProx® Configuration Utility installed on your computer, which is available at

www.rfideas.com/support/product-support/pcprox-plus

Click on the link above and save the resultant zip file to a directory on the computer. Unzip the contents of the zip file and click on the file pcProxConfig.exe (be sure the PC user has Administrator privileges to install programs). The pcProx® Configuration Utility will be installed with a start menu shortcut at **RF IDeas -> PCProx5 -> pcProxConfig.exe**

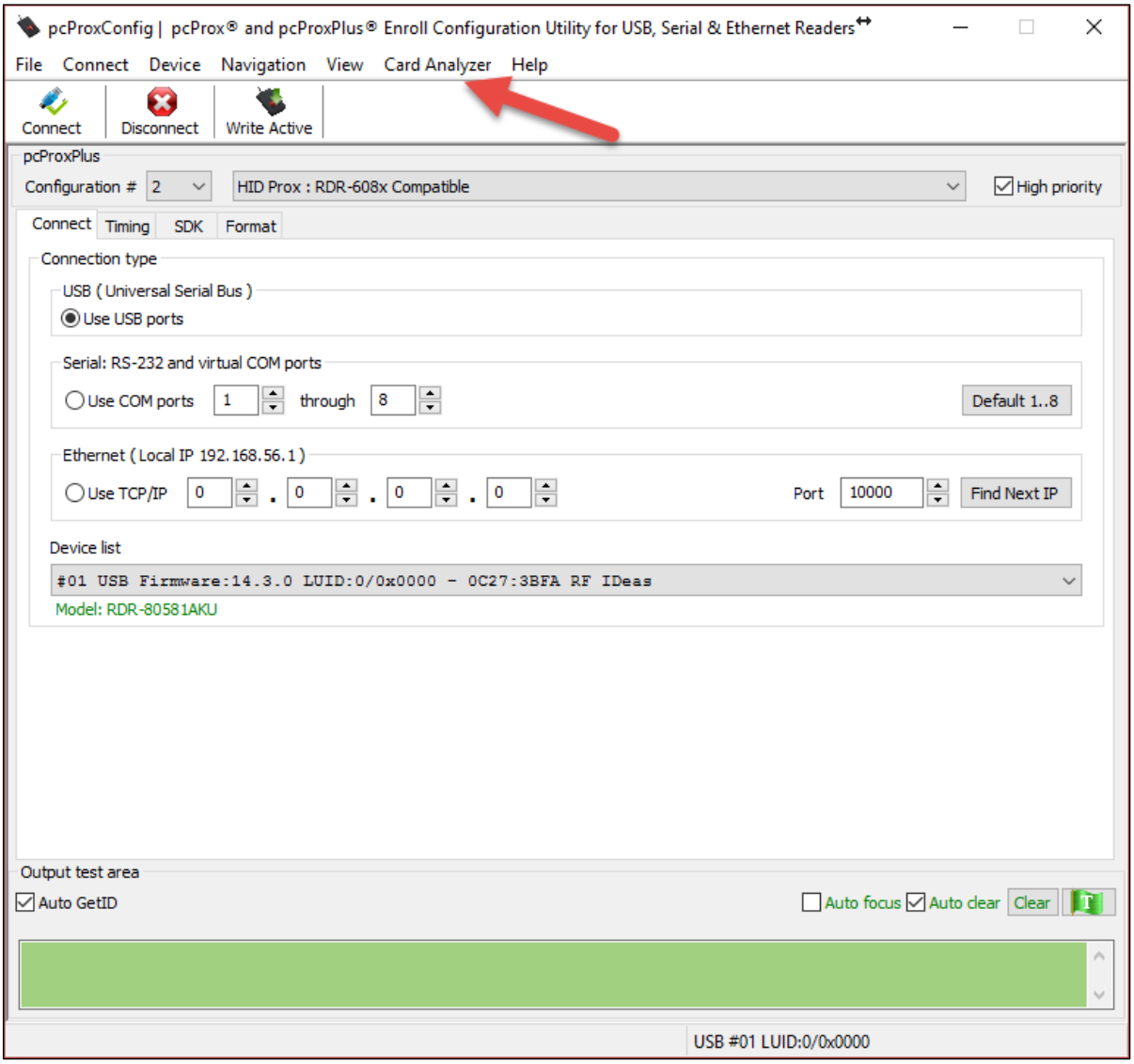
Plug in the pcProx® Plus card reader into an available USB port**.** Run the program PcProxConfig from the Windows start menu, click **Use USB ports,** and select the **Connect** button in the upper left of the screen to associate the program to the external reader.


pcProxConfig | pcProx® and pcProxPlus® Enroll Configuration Utility for USB, Serial & Ethernet Readers
File
Connect
Navigation
View
Card Analyzer
Help
Connect
Disconnect
Write Active
pcProxPlus
Configuration # 2
HID Prox : RDR-608x Compatible
High priority
Connect
Timing
SDK
Format
Connection type
USB (Universal Serial Bus)
Use USB ports
Serial: RS-232 and virtual COM ports
Use COM ports 1 through 8
Default 1..8
Ethernet (Local IP 192.168.56.1)
Use TCP/IP 0 . 0 . 0 . 0
Port 10000
Find Next IP
Device list
#01 USB Firmware:14.3.0 LUID:0/0x0000 - 0C27:3BFA RF IDeas
Model: RDR-80581AKU
Output test area
Auto GetID
Auto focus
Auto clear
Clear
USB #01 LUID:0/0x0000

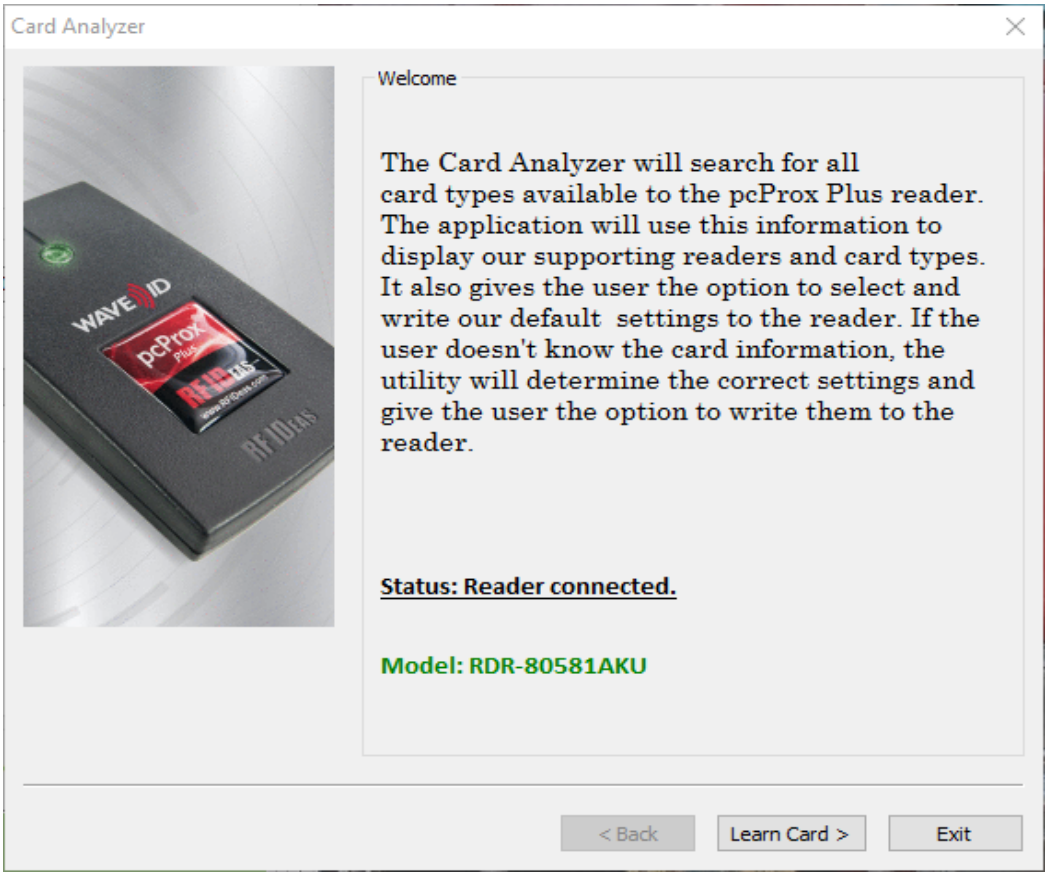
Determining what Card Profile to use

The pcProx® Plus Card enrollment reader must tailored to the **RFID Card Type** that will be used with the eConnect EAC system. If the card type is one of the Desfire, HiD iClass, Mifare Classic or Prox, please proceed to **Programming the pcProx® Plus reader** on page 83.

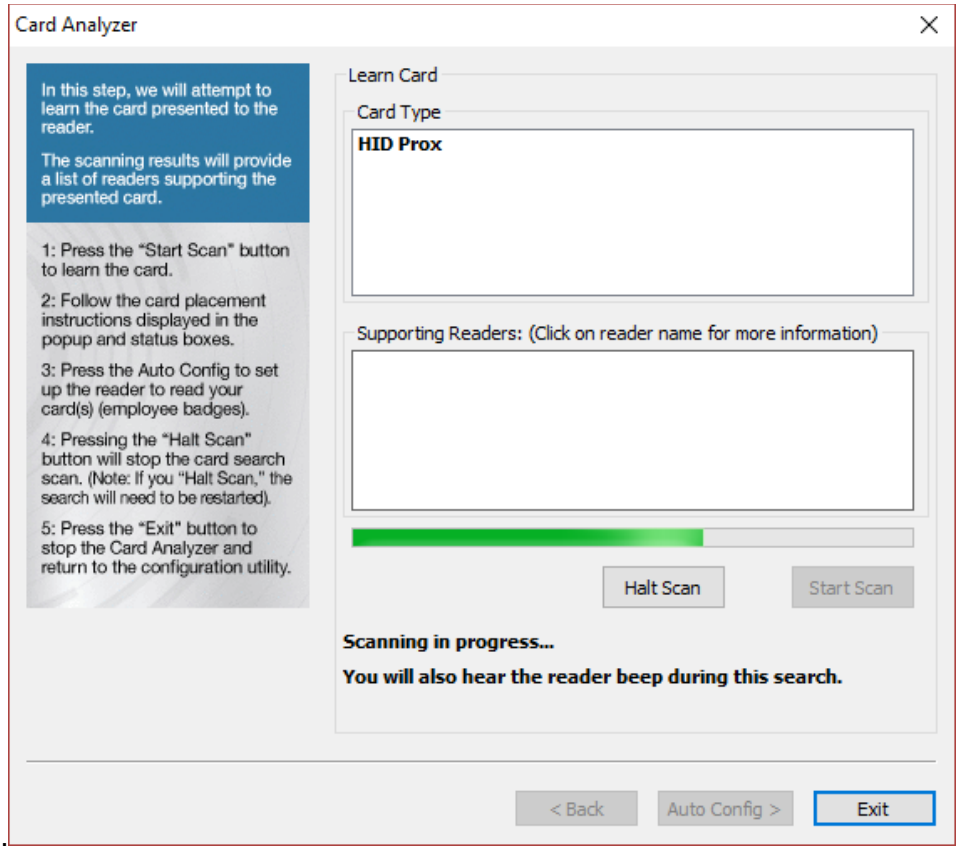
If the RFID card type is not known, the "**Card Analyzer**" Wizard, found under the "Card Analyzer" menu of the pcProxConfig program, can be used to scan for the Card Type:



After selecting Card Analyzer from the menu, place the ID card on the reader and press the Learn Card button:



The reader will then scan through several card types. When a compatible card type is found the **Card Type** box will show the type of card.

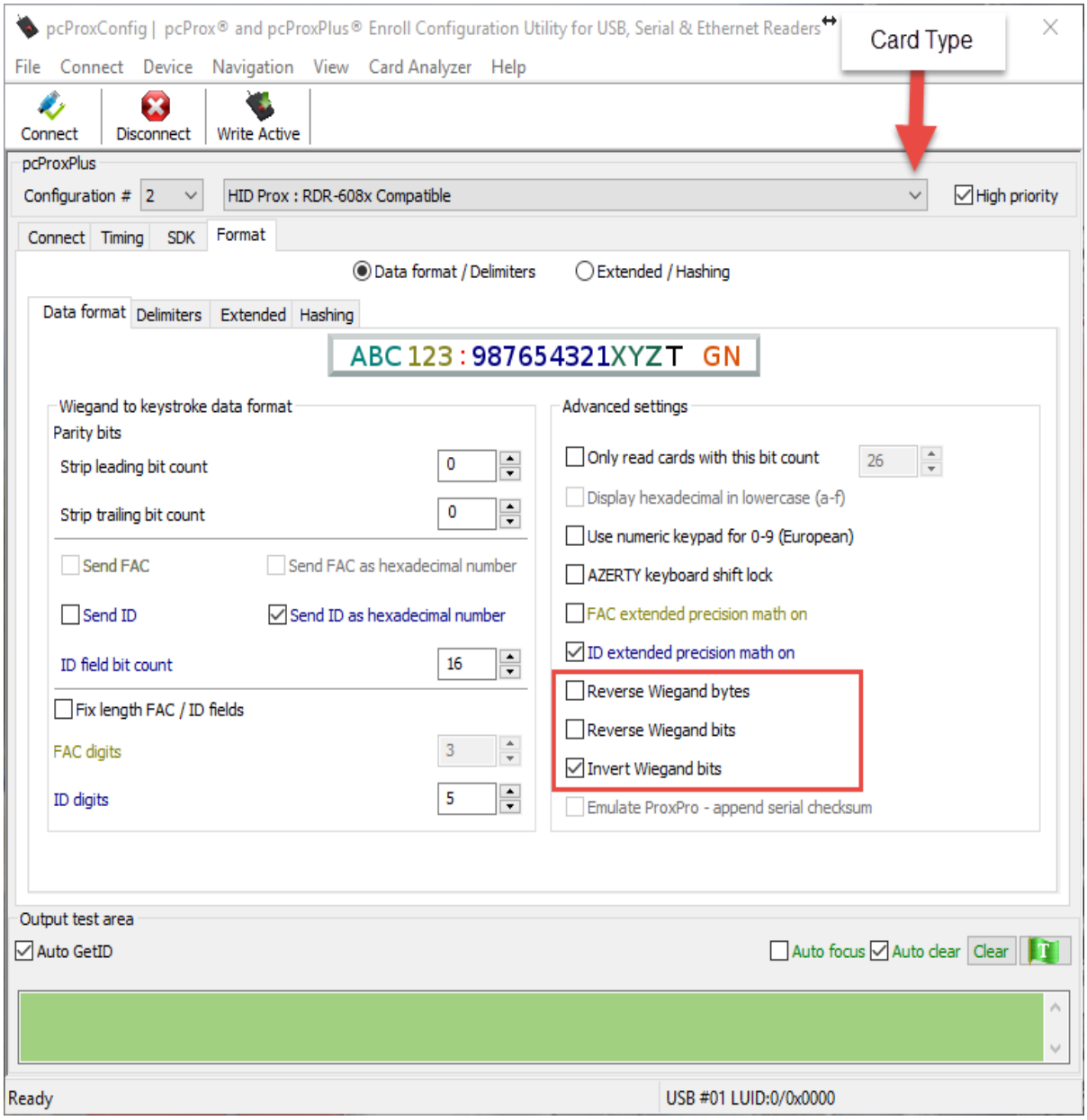


After determining the type, the user is ready to write the proper settings to the pcProx® Plus reader.

Programming the pcProx® Plus reader

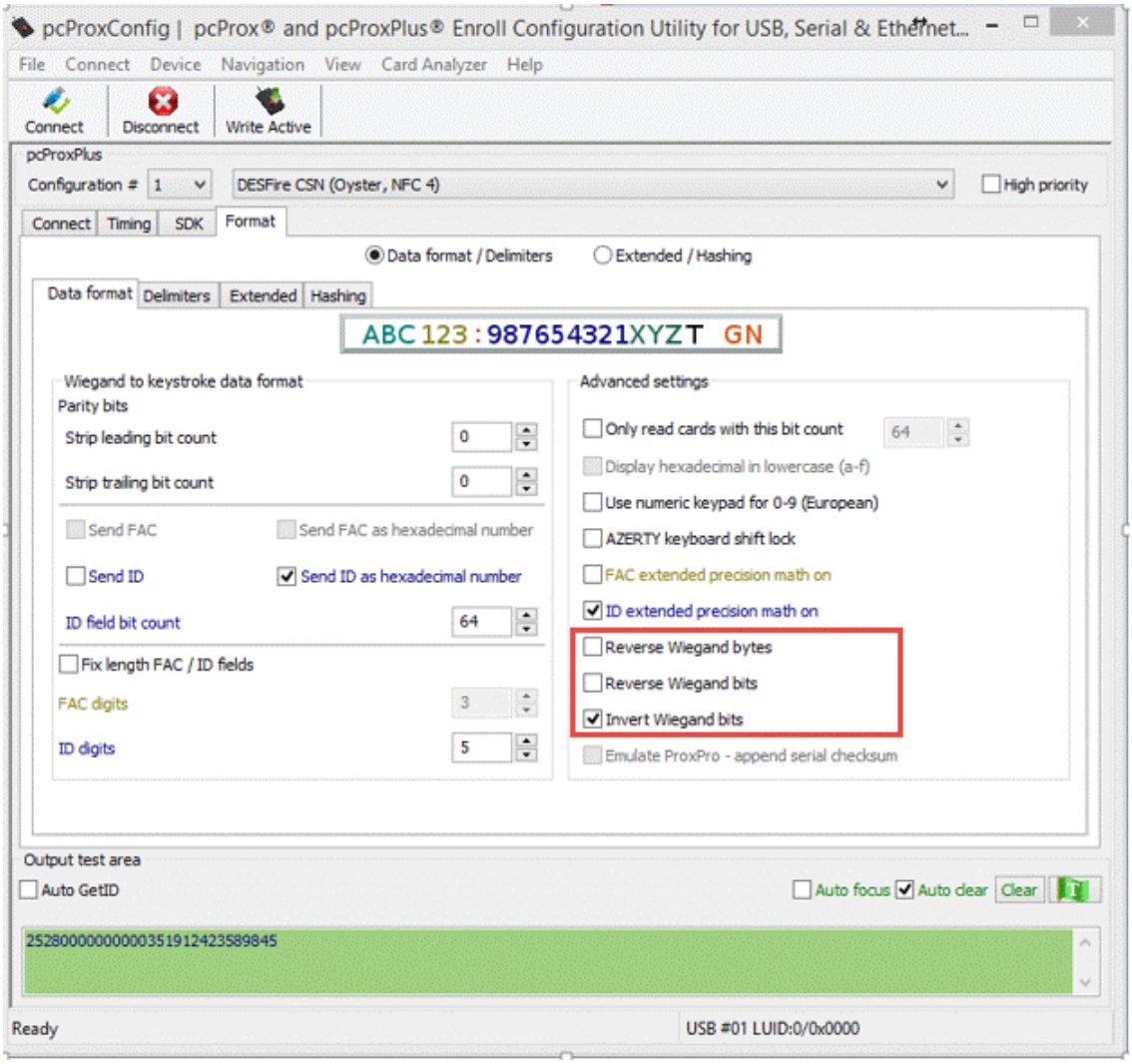
In order for the pcProx® Plus reader to be compatible with the eConnect EAC, the card reader must be flashed with the proper reader settings, as shown in the following steps:

The **Card Type** must be set from the drop-down selector on the **Format – Data Format** tab page. Additionally, the other fields and checkboxes on that page should initially be configured as shown below. Three advanced settings shown within a red rectangle must be checked or unchecked, depending on the **Card Type**. After all the settings have been made press the **Write Active** button to write the settings to the pcProx® Plus reader.

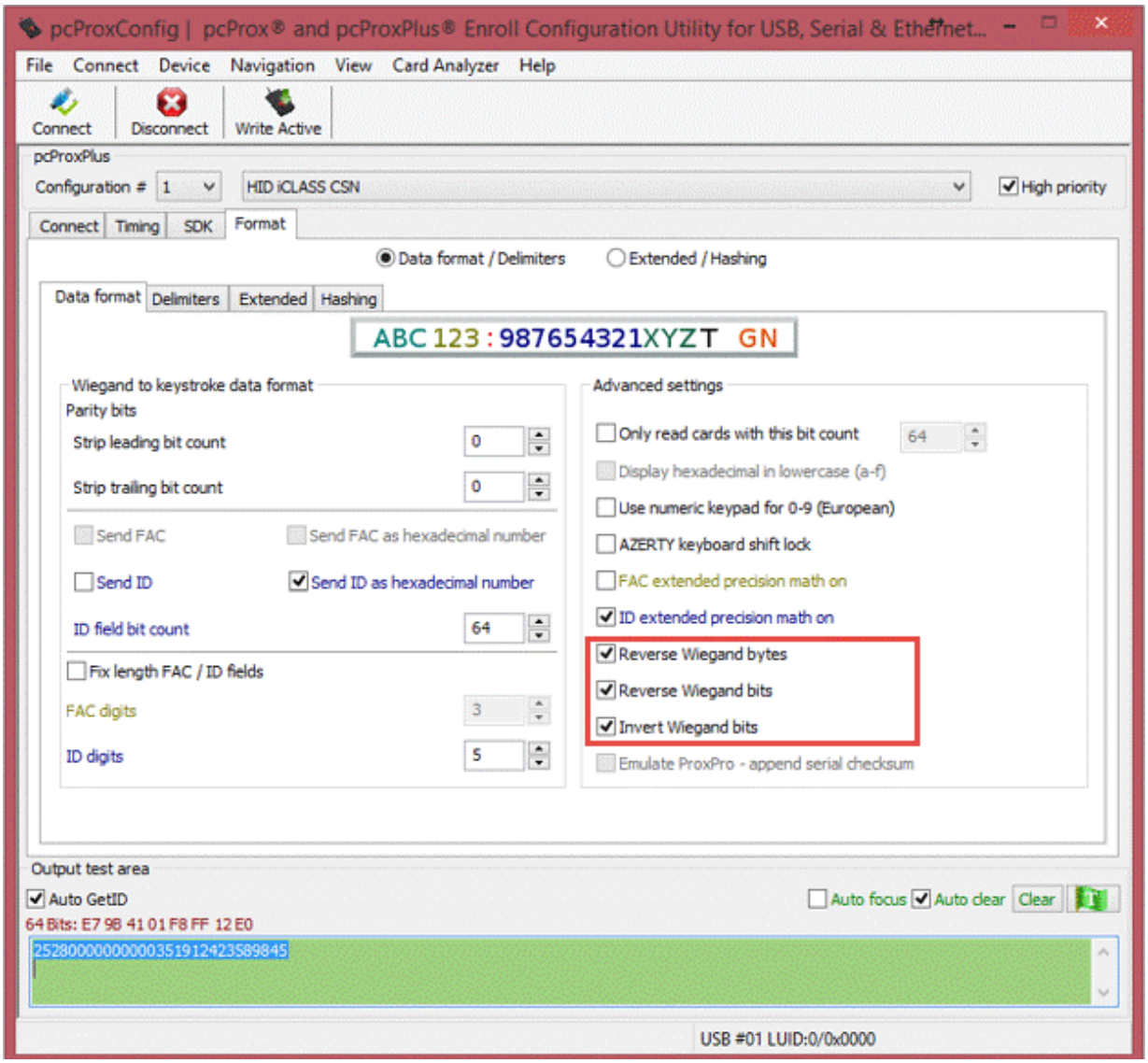

pcProxConfig | pcProx® and pcProxPlus® Enroll Configuration Utility for USB, Serial & Ethernet Readers
Card Type
File Connect Device Navigation View Card Analyzer Help
Connect
Disconnect
Write Active
pcProxPlus
Configuration # 2
HID Prox : RDR-608x Compatible
High priority
Connect Timing SDK Format
Data format / Delimiters
Extended / Hashing
Data format Delimiters Extended Hashing
ABC 123 : 987654321XYZT GN
Wiegand to keystroke data format
Parity bits
Strip leading bit count 0
Strip trailing bit count 0
Send FAC
Send FAC as hexadecimal number
Send ID
Send ID as hexadecimal number
ID field bit count 16
Fix length FAC / ID fields
FAC digits 3
ID digits 5
Advanced settings
Only read cards with this bit count 26
Display hexadecimal in lowercase (a-f)
Use numeric keypad for 0-9 (European)
AZERTY keyboard shift lock
FAC extended precision math on
ID extended precision math on
Reverse Wiegand bytes
Reverse Wiegand bits
Invert Wiegand bits
Emulate ProxPro - append serial checksum
Output test area
Auto GetID
Auto focus
Auto clear
Clear
Ready
USB #01 LUID:0/0x0000

Common RFID Card Types and Reader Format Settings

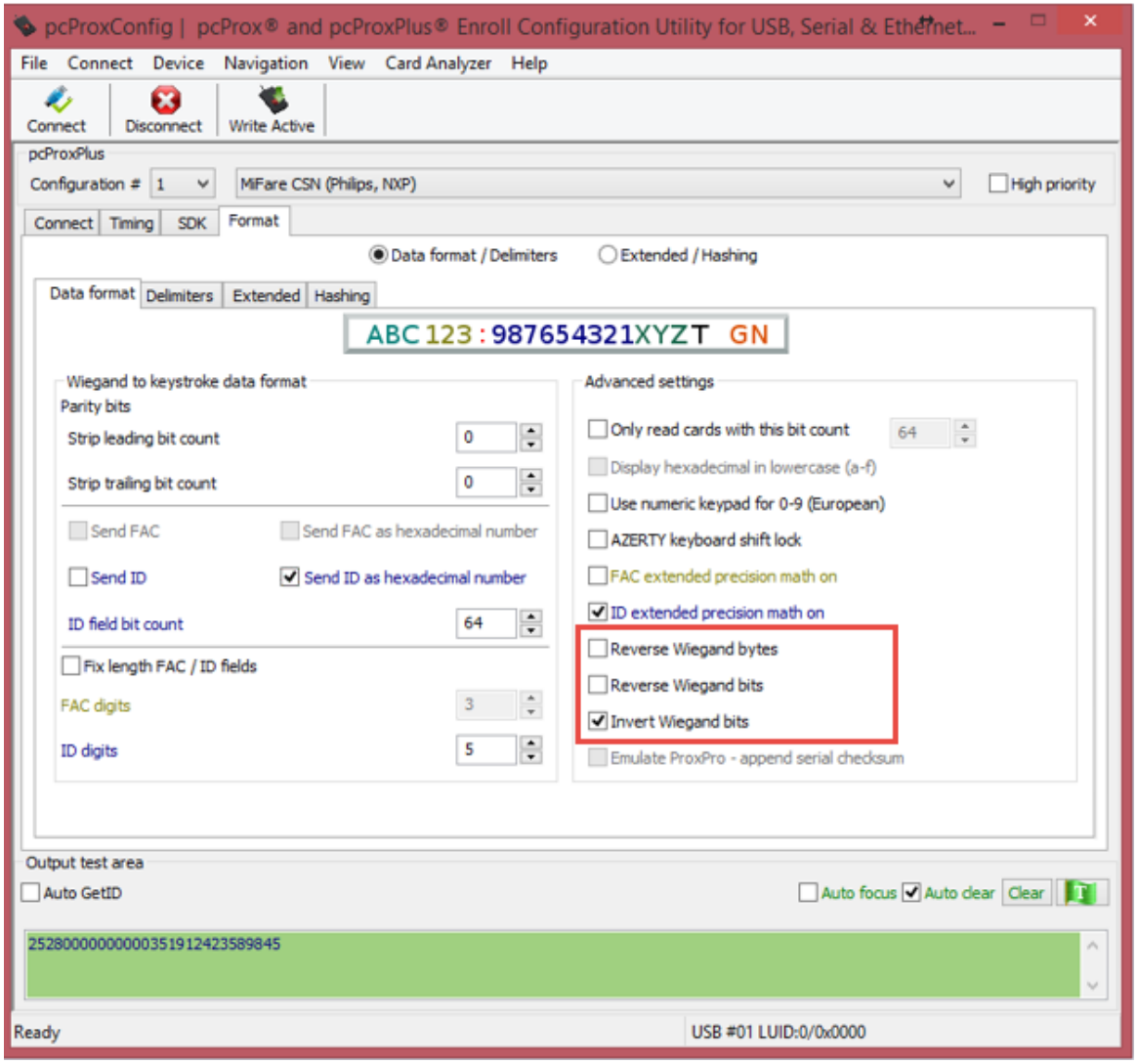
Desfire Card:



HiD iClass Card:



MiFare Classic Card:



Prox Card:

Prox cards require an additional settings in the **Wiegand to keystroke data format** box, as shown below: