DPS Telecom

"Your Partners In Network Alarm Monitoring"

Remote Power Switch (DC)

USER MANUAL

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November 10, 2017 **D-UM-216RP-12001** **Firmware Version 1.0J.0183**

Revision History

November 10, 2017	Added support for expansion unit
April 14, 2017	Removed 16-port option
November 18, 2015	Spec update
March 27, 2014	Edited Ping Settings & Control Association
March 21, 2014	Added Ping Targets, Settings, Relays, and Monitoring
February 26, 2014	Added Silence Feature to Alarms
March 19, 2013	Added unit dimensions to specifications page
March 12, 2013	Added control automation settings
July 24, 2012	Added 16 port version
July 6, 2011	Updated images; added power connection instructions & power relay section
May 10, 2011	Added information regarding optional alarm, analog, and control features.
September 3, 2010	Updated shipping list.
April 21, 2010	Initial Release

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1 Remote Power Switch (DC) Overview

Fig. 1.1 *Deploy this power switch at critical locations to switch on, off, and reboot equipment from miles away.*

If you've ever had to jump in your truck and drive hours to a site to reboot jammed equipment, you already know exactly why you need the Remote Power Switch (DC). With this power switch, you'll power on/off and reboot all your critical devices - right from your desk. The Remote Power Switch (DC) allows for eight 8-Amp DC separate power inputs for 8 dedicated outputs.

Using any PC on your network, you can operate controls, check temperature at the site, and keep tabs on power consumption - all without rolling a single truck. The web browser supports HTTPS (via SSL encryption), allowing you to browse securely.

From the same intuitive interface, you'll also be able to monitor and control using the integrated RTU functions: 16 discretes, 4 analogs, 2 controls. *(Build option)*

- Switch on/off and reboot equipment, **right from your desk chair**
- Drastically cuts down on **expensive truck rolls** - Quickly pays for itself
- Available with 8 power inputs/outputs
- Build Option: **RTU version** with 16 discretes, 4 analogs & 2 controls **OR only DC switching power**
- SNMP-compatible - **Send SNMP traps** to your SNMP manager
- Easily daisy-chain **multiple power switches**
- **Enable/disable remote access** to the unit for on-site troubleshooting
- **Secure web browsing** (via SSL encryption) for security-conscious organizations
- **Built-in temperature monitoring** to track changing environmental conditions
- **Automatically power-cycle devices** based on ping failure
- **RoHS** 5/6 compliant

Need to control lots of power at a single location? Use the expansion port on the back of the unit to daisy chain multiple units together. And when working on-site, you can make sure no one back at the CO disrupts your troubleshooting, you can temporarily disable remote access with the push of a button.

2 Specifications

DC Inputs:	Available with 8 inputs/outputs **OR** 16 inputs/outputs Available with built-in RTU functions **OR** Only DC switching power *Note: RTU build option not available on the 16 input/output version*
Current Draw:	200 mA @ 48 VDC
Output Relays:	2.5A max @ 50V continuous
Interfaces:	1 DB9 craft port 1 - 10BaseT LAN port 4 Phoenix connectors (8 inputs/output) 4-Pin WAGO connector for unit power *Optional*: 33.6 Telco modem for backup remote access *Optional*: 1 RS232/485 for serial reach through *Optional:* External temp jack / probe
SNMP:	v1 and v2c
Wire Gauge:	Minimum: 24 Maximum: 12
Web interface:	HTTP or HTTPS via SSL encryption
Mounting:	19" or 23" Rack mountable; 1 rack unit (RU)
Dimensions:	W = 17.026 in. H = 1.720 in. D = 7.646 in.
Firmware Upgrade:	Upgradeable via LAN or serial
TTY Interface:	Yes, through front DB9 craft port (dialup optional), Telnet on TCP port 2002
Op Temperature:	32°–140° F (0°–60° C)
Op Humidity:	0%–95% non-condensing
RoHS:	5 of 6

RTU Build Option Includes:

Alarm Termination: Via 50-pin Amphenol connector on back panel
Discrete alarms: 16
Analogs: 4
Controls: 2
Ctrl Commands: On, Off and Reset (off-on)
Internal Temp: 1

3 Shipping List

Please make sure all of the following items are included with your Remote Power Switch (DC). If parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at **1-800-622-3314**.

Remote Power Switch (DC)
D-PK-216RP

Remote Power Switch (DC) User Manual

Remote Power Switch (DC) Resource CD
D-UM-216RP-12001

6 ft. DB9M-DB9F Download Cable
D-PR-045-10A-04

14 ft. Ethernet Cable
D-PR-923-10A-14

x 2

19" Rack Ear
D-CS-325-10A-00

x 2

1/2 Amp GMT Fuse
2-741-00500-00

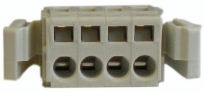
x 2

Two Standard Rack Screws
1-000-12500-06

Four 3/8" Ear Screws
2-000-60375-05

x 2

Two Metric Rack Screws
2-000-80750-03



4-Pin WAGO Connector
2-802-04037-00

Pads
2-015-00030-00

x 2

23" Rack Ear

x 4

DC I/O Phoenix Connectors
2-821-00762-08

3.1 Optional Accessories

RJ45 to RJ45 connection cable
D-PR-1028-10C-1.5

4 Installation

4.1 Tools Needed

To install the Remote Power Switch (DC), you'll need the following tools:

Phillips No. 2 Screwdriver

Small Standard No. 2 Screwdriver

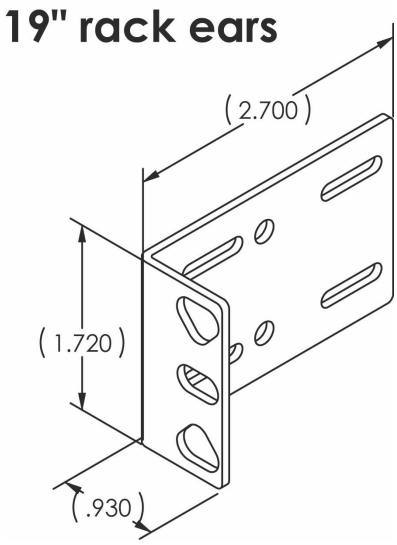
PC with web browser and terminal emulator, such as HyperTerminal

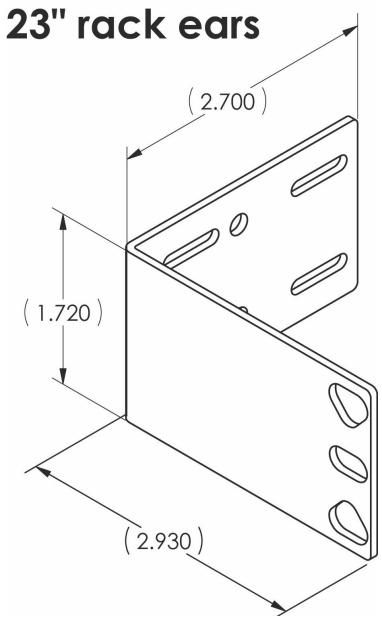
4.2 Mounting

The Remote Power Switch (DC) can be flush or rear-mounted

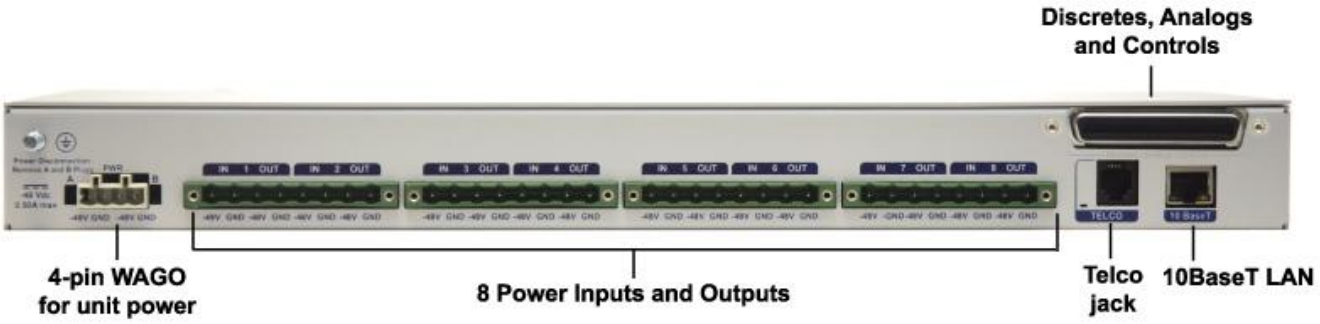
The Remote Power Switch (DC) mounts in a 19" rack or a 23" rack using the provided rack ears for each size. Two rack ears locations are provided. Attach the appropriate rack ears in the flush-mount or rear-mount locations shown above.

The rack ears can be rotated 90° for wall mounting or 180º for other mounting options.

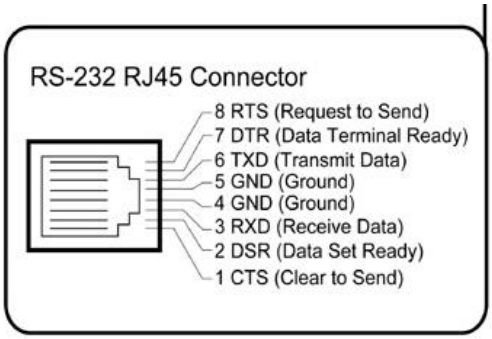




5 Remote Power Controller Back Panel



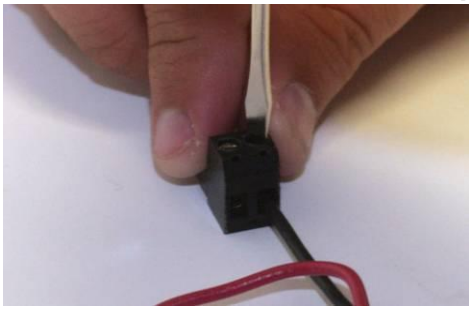
Remote Power Switch (DC) back panel connections



Optional RJ-45 connection

5.1 Main Power Connection

To connect the NetGuardian to a power supply:



Battery lead left, and Ground right

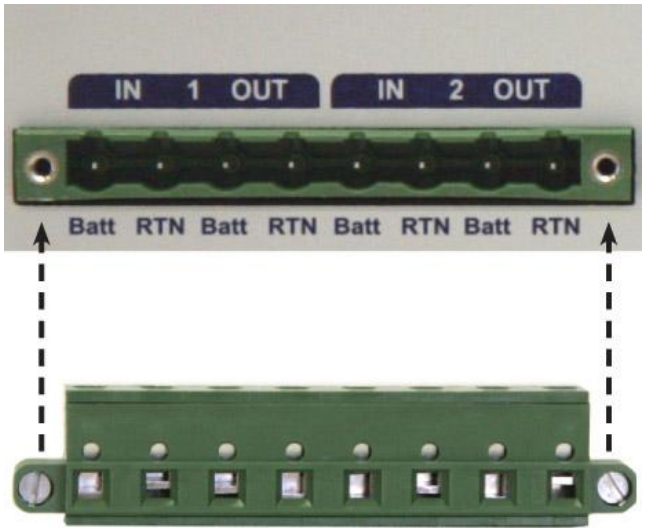
Grounding Lug left, dual power inputs right

1) Insert a battery *ground* wire into the connector's **right** terminal (Shown above) and battery *lead* into the **left** terminal and tighten the screws. Insert the connector into the power plug. Attach a grounding wire to the grounding lug .
2) Ensure the power status LED is lit up green for correct polarity.
3) Insert the local fuse into the fuse holder.
4) The front panel status LED should flash RED and GREEN to indicate that the unit is operating.

Note: Always use safe power practices when making power connections. Make sure the power wires are not active before making any power connections

5.2 Switched Power Input/Output Connections

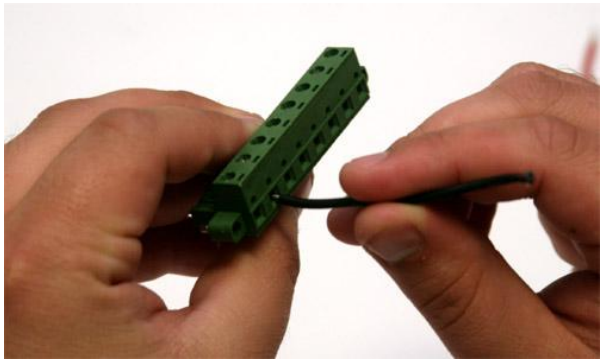
Your switched power feeds will be wired to 8-pin connectors, with 2 inputs and 2 outputs per connector, and plugged into any of the power in/out receptacles on the rear of your Remote Power Switch.



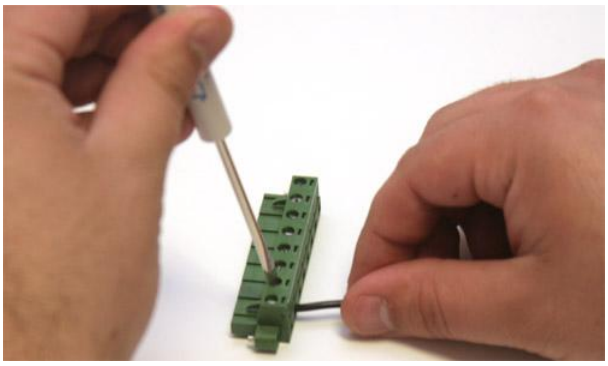
Your power feeds will be connected to the remote power switch via the 8-pin power connector.

To connect your power feeds:

1. If connected, remove the front panel fuses.
2. If connected, disconnect the 8-pin power connector from the remote power switch before wiring power inputs or outputs.
3. For each input/output, the Battery cable will be on the left and the RTN/GND line will be on the right. Connect the RTN/GND cable to the terminal for the input or output. Using a small flathead screwdriver, tighten the terminal.

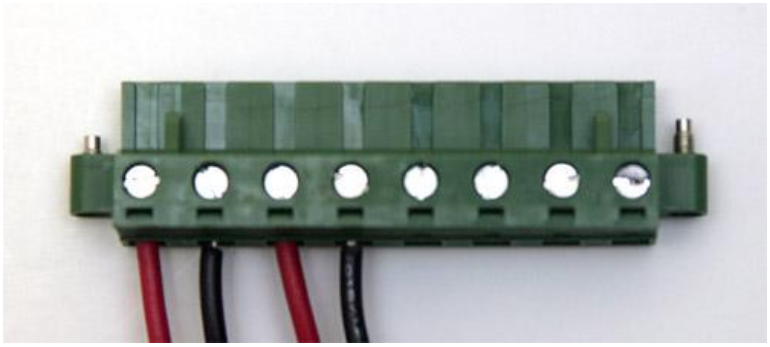


Inserting the a wire into the connector



Tightening the terminal to hold the wire in place

4. Connect the Battery line to the terminal for the input or output. Using a small flathead screwdriver, tighten the terminal.

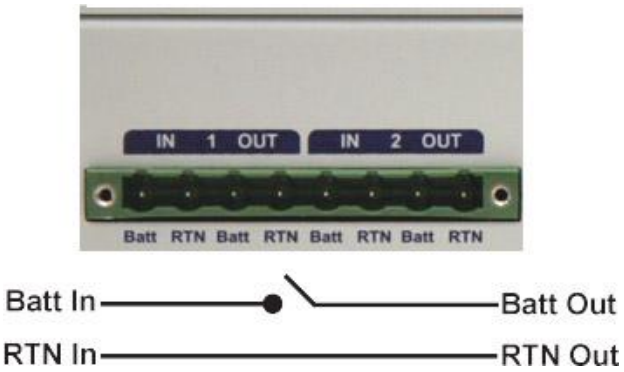


A connector wired with one input and one output

5. Once you've wired your Battery and RTN lines to the 8-pin plug, connect the plug to the Remote Power Switch.
6. Using your flathead screwdriver, tighten the screws on the left and right side of the plug to fasten it securely to the unit.
7. Reinsert the Remote Power Switch's fuses to power the unit.

5.2.1 Power Relays

The Remote Power Switch's power outputs are internally relayed from the unit's battery inputs. The relay allows you to control power to your outputs. The unit's battery feeds are polarity insensitive, allowing you to connect and control both positive and negatively powered equipment with the your Remote Power Switch.



The unit's power outputs are relayed internally, allowing you to control your outputs

	+VDC	-VDC
Batt	+	-
RTN	-	+

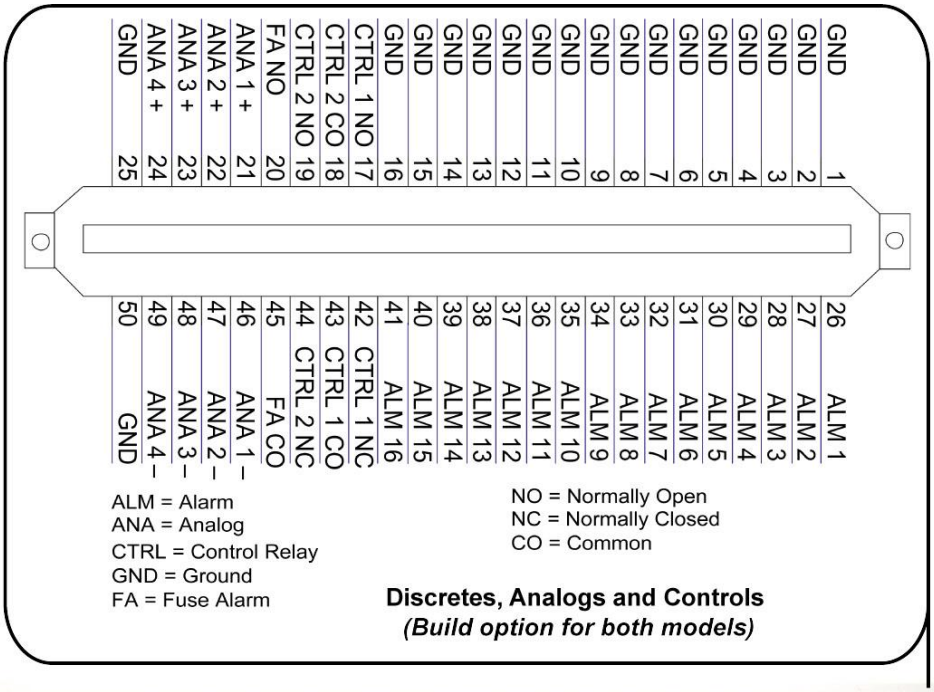
Table: Connecting the correct leads to your BATT and RTN inputs and outputs

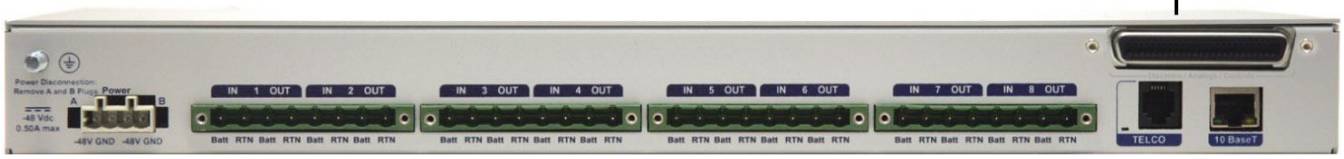
5.3 LAN Connection

To connect the Remote Power Switch (DC) to the LAN, insert a standard RJ45 Ethernet cable into the 10BaseT Ethernet port on the back of the unit. If the LAN connection is OK, the LNK LED will light **SOLID GREEN**.

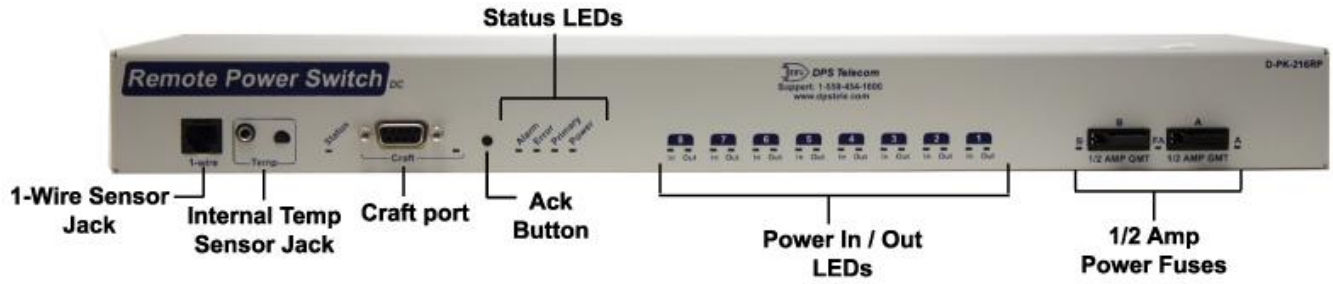
5.4 (Optional) Alarm, Analog, and Control Relay Connector

The Remote Power Switch's 16 discrete alarm inputs, 2 control relay outputs, and 4 analog inputs are all connected through the 50-pin amphenol connector.





6 Remote Power Controller Switch Front Panel



6.1 Front Panel LEDs

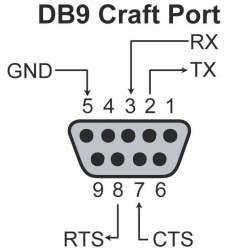
The Remote Power Switch's front panel LEDs indicate communication and alarm reporting status.

LED	Status	Description
Craft	Blink Green	Transmit over craft port
	Blink Red	Receive over craft port
Alarm	Blink Green	Transmit over Modem port
	Blink Red	Receive over Modem port
Error	N/A	Reserved for future use
Primary	Blink Green	Transmit over Telco Port
	Blink Red	Receive over Telco Port
Power	Solid Green	The unit is powered
Power In	Solid Green	Indicates that a power input feed is active
Power Out	Solid Green	Indicates that a power output feed is active

Descriptions of the front panel LEDs for the Remote Power Switch

6.2 Craft Port

Use the front panel craft port to connect the Remote Power Switch (DC) to a PC for onsite unit configuration. To use the craft port, connect the included DB9 download cable from your PC's COM port to the craft port. Pinout is shown above for reference, but this is a standard DB9 to DB9.



Remote Power Switch (DC) Front panel connections.

6.3 Ack Button

Hold the Ack button for 3 seconds to disable remote access to the unit, the status LED will turn Red. This is useful while on-site, so that unit settings cannot be changed while you are working. Disabling remote access also means you cannot change the state of control relays or reboot the system. To Restore access, hold Ack button again for 3 seconds, the status LED will turn green.

6.3.1 Bypass Password

Hold button while unit is booting up to bypass password in the event of a forgotten password.

7 Initial Configuration: How to Configure the RPS Ethernet Port

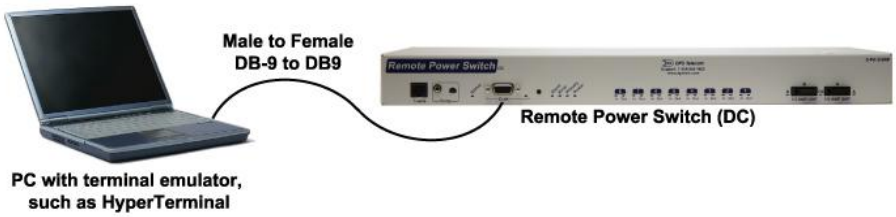
Before you can connect to your NetGuardian remotely, you must first configure the ethernet ports. Initial ethernet configuration is performed via the unit's TTY interface and a craft connection or a LAN connection that mimics the NetGuardian's factory set IP and subnet mask.

NOTE: For craft port connection, use the provided DB9 cable. ***DPS Part # D-PR-045-10A-04***

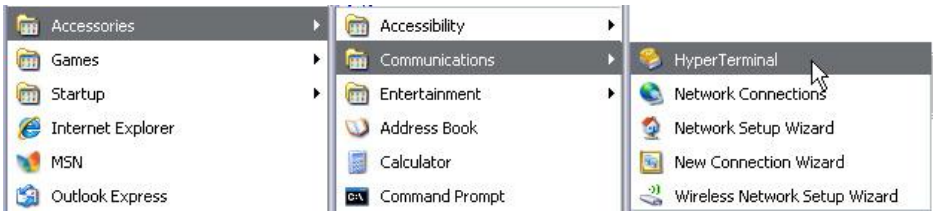
Alternative option: You can skip the TTY interface by using a LAN crossover cable directly from your PC to the Remote Power Switch (DC) and access its Web Browser.

7.1 ...via Craft Port

1. Make sure you are using the straight through (1 to 1) Male to Female DB9-DB9 download cable provided with your Remote Power Switch (DC) to make a craft port connection. We'll be using HyperTerminal to connect to the unit in the following example - however, most terminal-emulating programs should work.



2. To access HyperTerminal using Windows, click on the **Start** menu **>** select **Programs** > **Accessories** > **Communications** > **HyperTerminal.**

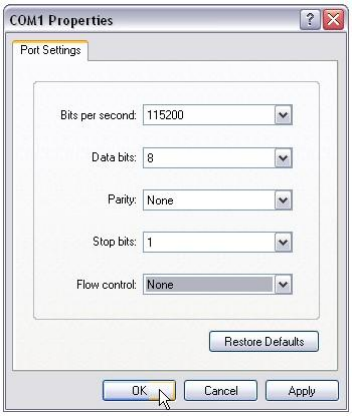


3. At the Connection Description screen, enter a name for this connection. You may also select an icon. The name and icon do not affect your ability to connect to the unit.

4. At the Connect To screen, select Com port you'll be using from the drop down and click OK. (COM1 is the most commonly used.)

5. Select the following COM port options:
   - Bits per second: 9600
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
   - Flow control: **None**

   Once connected, you will see a blank, white HyperTerminal screen. Press Enter to activate the configuration menu.

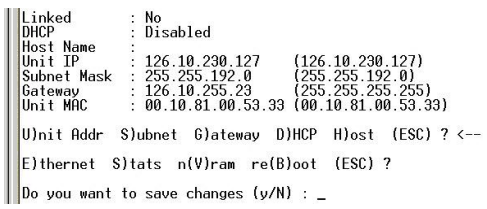


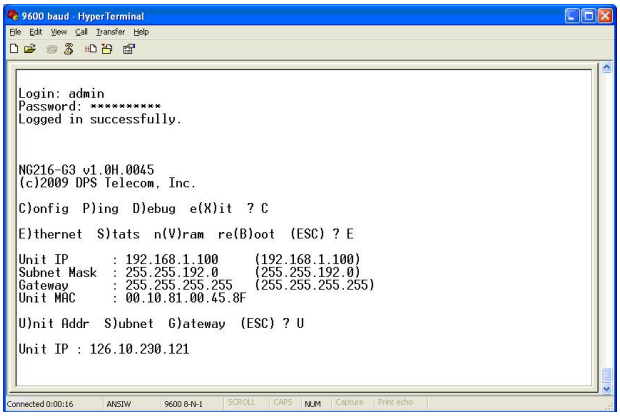
6. When prompted, enter the default user name **admin** and password **dpstelecom**. NOTE**:** If you don't receive a prompt for your user name and password, check the Com port you are using on your PC and make sure you are using the cable provided.

Additional cables can be ordered from DPS Telecom:
Part number D-PR-045-10A-04

7. The Remote Power Switch (DC)'s main menu will appear. Type **C** (config), then **E** (ethernet) to reach the ethernet menu. Use the arrow keys to move your cursor to the right fields and configure the unit's IP address, subnet mask, and default gateway.

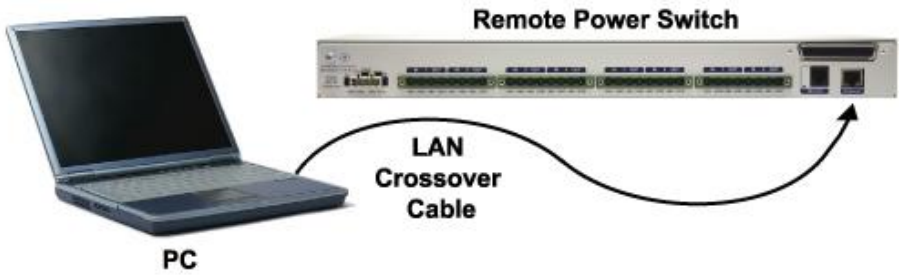
8. ESC to the main menu. When asked if you'd like to save your changes, type Y for Y)es. Reboot the Remote Power Switch (DC) to save its new configuration.





Now you're ready to do the rest of your configuration via LAN. Plug your LAN cable into the Remote Power Switch (DC) and see section "Logging On to the Remote Power Switch (DC)" to continue using the Web Browser.

7.2 ...via LAN



Connection through Ethernet port

To connect to the Remote Power Switch (DC) via LAN, all you need is the unit's IP address (Default IP address is 192.168.1.100).

If you DON'T have LAN, but DO have physical access to the Remote Power Switch (DC), connect using a LAN crossover cable. **NOTE:** Newer PCs should be able to use a standard straight-through LAN cable and handle the crossover for you. To do this, you will temporarily change your PC's IP address and subnet mask to match the factory default IP settings. Follow these steps:

1. Get a LAN crossover cable and plug it directly into the Remote Power Switch (DC)'s LAN port.
2. Look up your PC's current IP address and subnet mask, and write this information down.
3. Reset your PC's IP address to **192.168.1.200**. Contact your IT department if you are unsure how to do this.
4. Reset your PC's subnet mask to **255.255.0.0**. You may have to reboot your PC to apply your changes.
5. Once the IP address and subnet mask of your computer coincide with the unit, you can access the Remote Power Switch (DC) via a Telnet session or via Web browser by using the unit's default IP address of **192.168.1.100**.
6. Provision the Remote Power Switch (DC) with the appropriate information, then **change your computer's IP address and subnet mask back to their original settings.**

Now you're ready to do the rest of your configuration via LAN. Plug your LAN cable into the Remote Power Switch (DC) and see Section 9, "Logging On to the Remote Power Switch (DC)" to continue databasing using the Web Browser.

7.3 TTY Interface

The TTY interface is your Remote Power Switch's built-in interface for basic configuration. In addition to configuring the unit's ethernet port, you can use the TTY interface to:

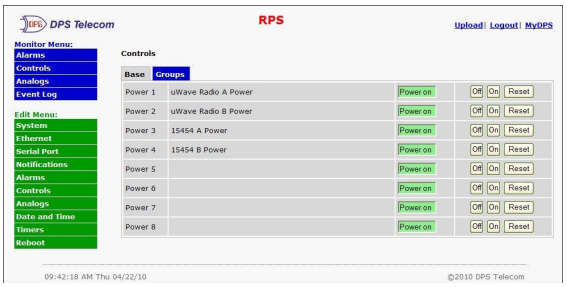
- Debug and troubleshoot
- Set unit back to factory defaults
- Ping other devices on the network

For Telnet, connect to the IP address at port 2002 to access the configuration menus **after** initial LAN/ WAN setup. **Telnet sessions are established at port 2002, not the standard Telnet port** as an added security measure.

Navigating the TTY Interface
The letters before or enclosed in parentheses () are menu shortcut keys. Press the shortcut key to access that option. Pressing the ESC key will always bring you back to the previous level. Entries are not case sensitive.

For more advanced configuration tools, please use the Web Browser Interface. See the following section **Advanced Configuration: Using the RPS Web Browser** for more information on configuring your Remote Power Switch.

8 Advanced Configuration: Using the RPS Web Browser



The Remote Power Switch (DC) features a built-in Web Browser Interface that allows you to configure the unit through the Internet or your Intranet. You can quickly issue controls using most commonly used browsers.

NOTE: The Maximum number of users allowed to simultaneously access the Remote Power Switch (DC) via the Web is 4.

8.1 Logging on to the Unit

For Web Interface functionality, the unit must first be configured with some basic network information. If this step has not been done, refer to the section "Quick Start: How to Connect to the Remote Power Switch (DC)" for instructions on initial configuration setup.

1. To connect to the Remote Power Switch (DC) from your Web browser, enter its IP address in the address bar of your web browser. It may be helpful to bookmark the logon page to avoid entering this each time.

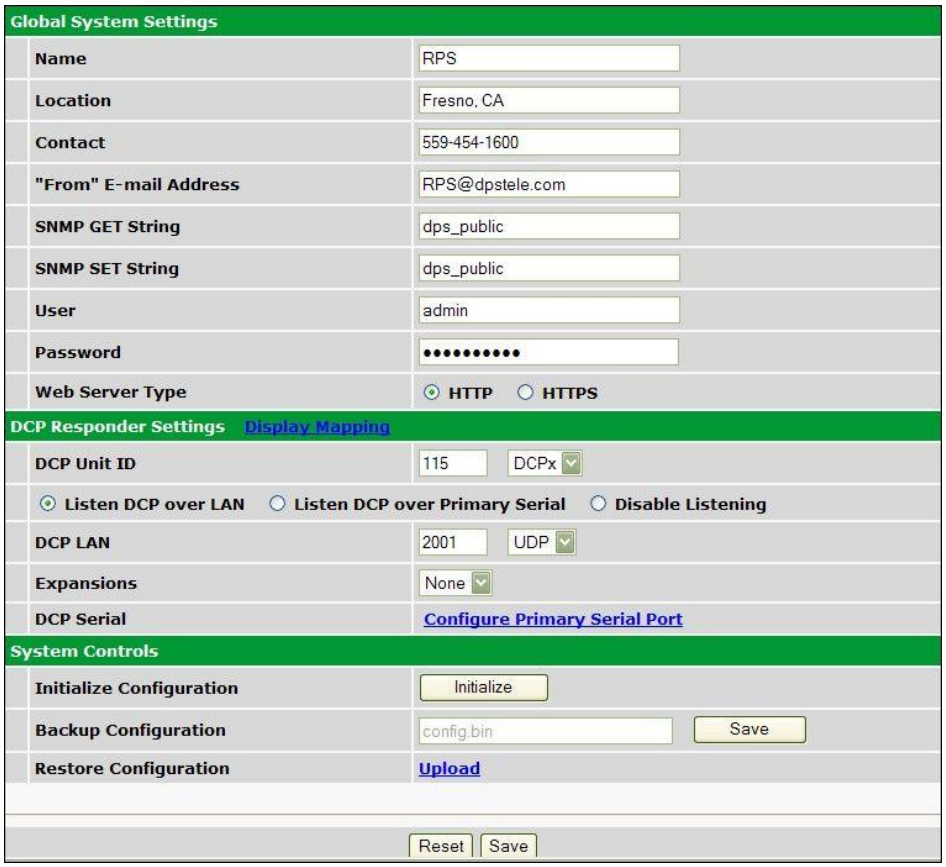
2. After connecting to the unit's IP address, enter your login information and click OK. **NOTE:** The factory default username is "***admin***" and the password is "***dpstelecom***".
3. In the left frame you will see the **Monitor** menu (blue) and **Edit** menu (green) The Monitor menu links are used to view the current status of alarms. The Edit menu is used to change the unit's configuration settings. All the software configuration will occur in the **Edit** menu. The following sections provide detailed information regarding these functions.

Enter your password to enter the Remote Power Switch (DC) Web Browser Interface

8.1.1 Changing the Default Password

The password can be configured from the **Edit** > **System** screen. The minimum password length is four characters; however, DPS recommends setting the minimum password length to at least five characters. Use the following steps to change the logon password:

1. From the **Edit** menu select **System**.
2. Enter the new user name in the **User** field.
3. Enter the new password in the **Password** field.
4. Click the **Save** button.



Global System Settings section of the Edit > System menu

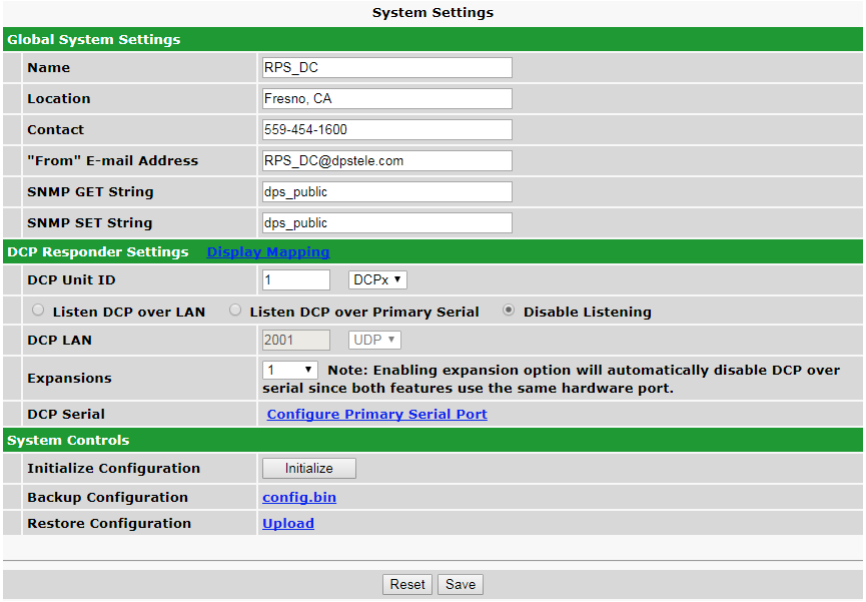
NOTE: You will see the following popup when making changes to the Remote Power Switch (DC) from the **Edit** menu. It will appear when confirming your changes to the database, either by clicking **Next** in the setup wizards or the **Save** button.

Commit to NVRAM popup

8.2 Edit Menu Field Descriptions

8.2.1 System

From the **Edit** > **System** menu, you will configure global system and DCP settings. You can also resent the unit to factory defaults, backup your configuration, or upload an existing configuration file.



The Edit > System menu

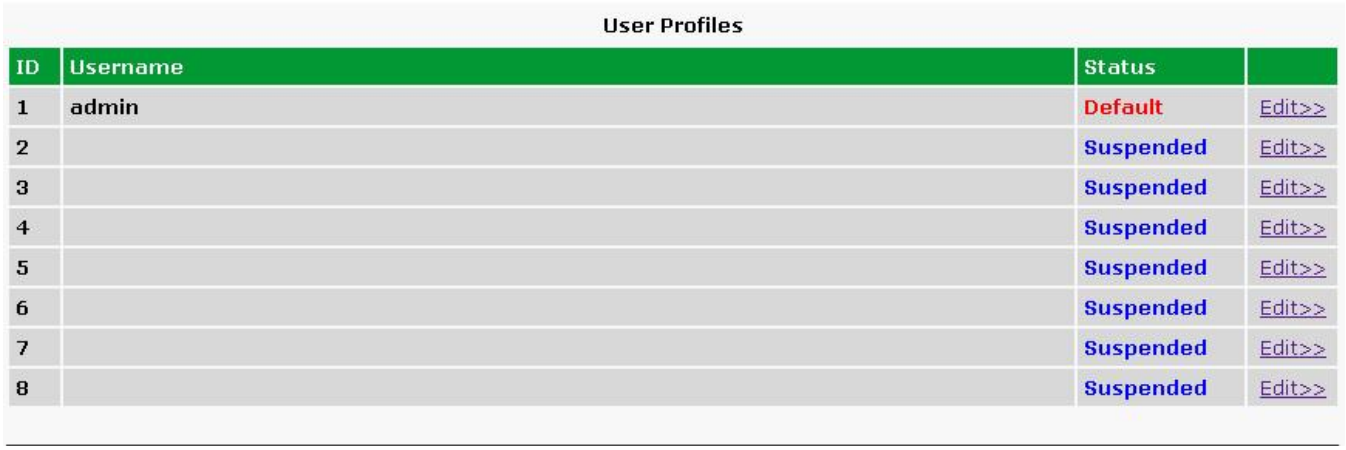
Global System Settings	
Name	A name for this Remote Power Switch (DC). (Optional field)
Location	The location of this Remote Power Switch (DC). (Optional field)
Contact	Contact telephone number for the person responsible for this Remote Power Switch (DC). (Optional field)
"From" Email Address	A valid email address used by the unit to send email alarm notifications
SNMP Get String	Community name for SNMP requests
SNMP SET String	Community name for SNMP SET requests
***User**	Used to change the username for logging into the unit.
***Password**	Used to change the password for logging into the unit (case-sensitive).
Web Server Type	Select HTTP (port 80) or HTTPS (port 443)
DCP Responder Settings *(For use with T/Mon NOC)*	
DCP Unit ID	User-definable ID number for this Remote Power Switch (DC) (DCP Address).
Listen DCP	Choose to listen DCP over LAN or serial. May also be disabled.
DCP LAN	Enter the DCP port for this Remote Power Switch (DC) (UDP/TCP port).
Expansions	Select '1' ONLY if you are using a secondary Remote Power Switch as an expansion unit
System Controls	
Initialize Configuration	Used to restore all factory default settings to the Remote Power Switch (DC). Do not initialize the non-volatile RAM (NVRAM) unless you want to re-enter all of your configuration settings.
Backup Configuration	Saves your current configuration to a .bin file
Restore Configuration	Clickable link that takes you to the Firmware Load screen, where you'll browse to the config file you've saved on your PC

Field descriptions for the System Menu

*Only applicable to firmware v1.0L.0052 and earlier

8.2.2 User Profiles

From the Edit > User Profiles menu, you are able to create multiple user accounts. User accounts can be given access to the Provisioning Menu and the Upload link, or be restricted to just the Monitoring pages.



User Profiles

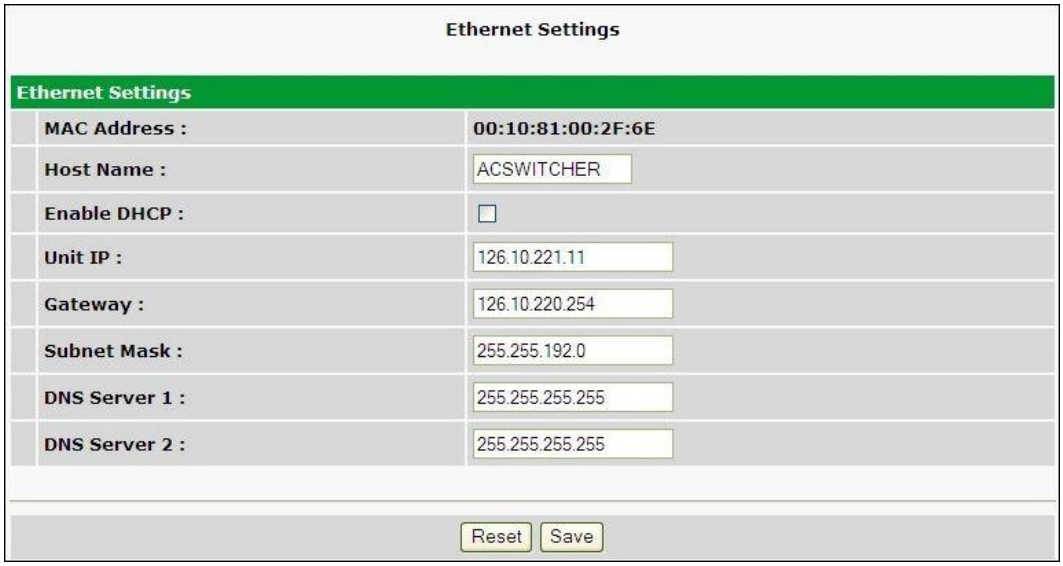
ID	Username	Status	
1	admin	Default	Edit>>
2		Suspended	Edit>>
3		Suspended	Edit>>
4		Suspended	Edit>>
5		Suspended	Edit>>
6		Suspended	Edit>>
7		Suspended	Edit>>
8		Suspended	Edit>>

User Profiles	
Edit >>	Grants access into the User Profile Edit page
Status	
Default	Default User Profile and Edit Privileges can not be disabled.
Active	User Profile that is enabled and can be used to log into unit.
Suspended	User Profile that is not currently in use.

User Profile Settings	
Enable User Profile	Enables the current Profile and allows the profile to be edited.
Username	The Username the User will use to log into the unit (Must be greater than 4 characters).
Password	The Password the User will use to log into the unit (Case-sensitive).
Access Rights	
Edit Privileges	Allows the User access to the Provisioning Menu and to the Upload link.

8.2.3 Ethernet

The **Edit** > **Ethernet** menu allows you to define and configure Ethernet settings. For initial configuration, see the section of this manual titled, **Quick Start: How to Connect to the RPS**.



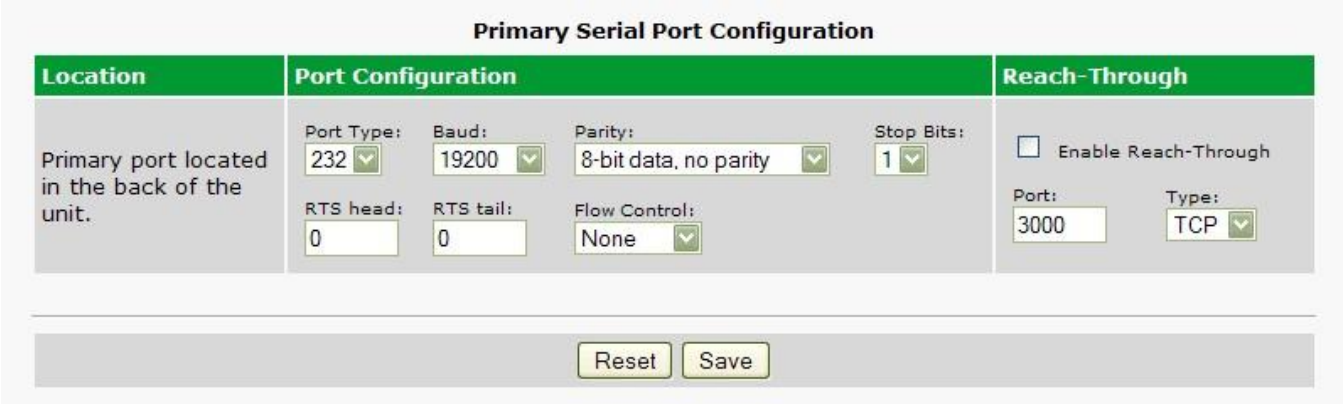
The Edit > Ethernet menu

Ethernet Settings	
MAC Address	Hardware address of the Remote Power Switch (DC). (Not editable - For reference only.)
Host Name	Used only for web browsing. Example: If you don't want to remember this unit's IP address, you can type in a name is this field, such as NG216G3. Once you save and reboot the unit, you can now browse to it locally by simply typing in "NG216G3" in the address bar. (no "http://" needed).
Enable DHCP	Used to turn on Dynamic Host Connection Protocol. NOT recommended, because the unit is assigned an IP address from your DHCP server. The IP you've already assigned to the unit becomes inactive. Using DHCP means the unit will NOT operate in a T/Mon environment.
Unit IP	IP address of the Remote Power Switch (DC).
Gateway	An important parameter if you are connected to a wide-area network. It tells the Remote Power Switch (DC) which machine is the gateway out of your local network. Set to 255.255.255.255 if not using. Contact your network administrator for this info.
Subnet Mask	A road sign to the Remote Power Switch (DC), telling it whether your packets should stay on your local network or be forwarded somewhere else on a wide-area network.
DNS Server 1	Primary IP address of the domain name server. Set to 255.255.255.255 if not using.
DNS Server 2	Secondary IP address of the domain name server. Set to 255.255.255.255 is not using.

Field descriptions for the Ethernet Settings screen

8.2.4 Serial Port

The **Edit>Serial Ports** menu allows you to configure your Remote Power Switch's serial port. The unit's serial port can be configured for reach-through access, so you can interface with a serial device at your site via LAN.



Configure your serial ports from the Edit>Serial Ports menu

Port Configuration	
Port Type	Select your serial port type. Default value: 232 (Build options 232, 202, 485)
Baud	Change the craft port baud rate
Parity	Set even, odd, or no parity. Default value: no parity.
Stop Bits	Set the number of stop bits. Default value: 1
RTS head	Set the request to send (RTS) head time in milliseconds
RTS tail	Set the request to send (RTS) tail time in milliseconds
Flow Control	Set to hardware if flow control is required. Defaults to None.
Reach Through	
Enable Reach Through	Checking this box enables serial reach-through, allowing you to access a serial device connected to your Remote Power Switch via LAN
Port	Enter the Port number used for serial reach through interaction
Type	Use the pull-down box to select the connection type, TCP or UDP

Field descriptions for the Serial Port Configuration screen

8.2.5 Notifications

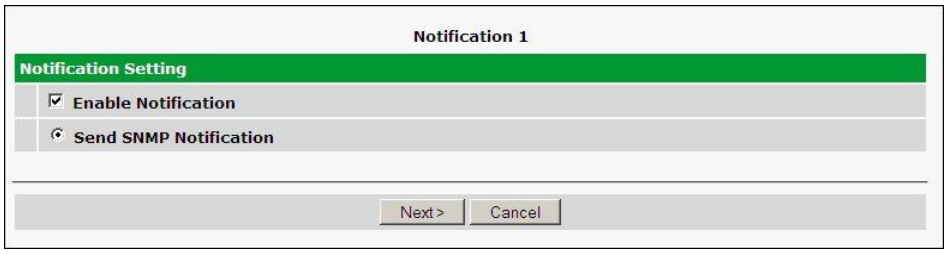
From the initial **Edit** > **Notifications** menu, you will see which of the 8 notifications are enabled, their server, and schedule. To configure notifications:
1. Click on the number link for one of the notifications to begin configuration.

Notifications

No.	Stat.	Type	Server	Time Window 1	Time Window 2
1	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
2	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
3	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
4	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
5	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
6	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
7	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
8	OFF	SNMP		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time

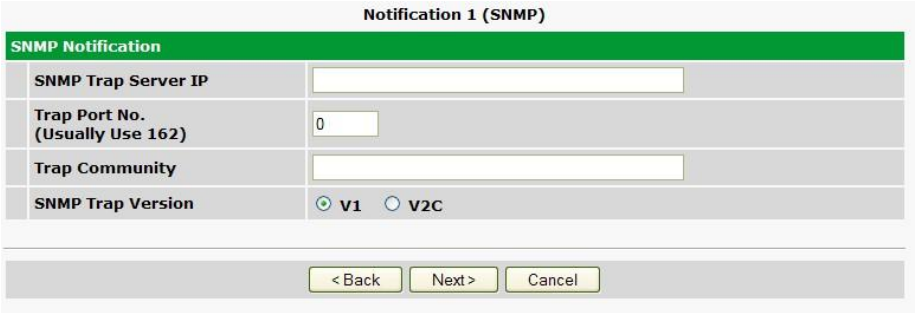
The Edit > Notifications menu

2. Once you've chosen which notification you want to setup, check the **Enable Notification** to turn it "on." Click **Next** to continue.



Click on a notification to enable it and choose between SNMP and email notifications.

3. Input settings for the SNMP Trap server that the Remote Power Switch will send the SNMP Trap to.



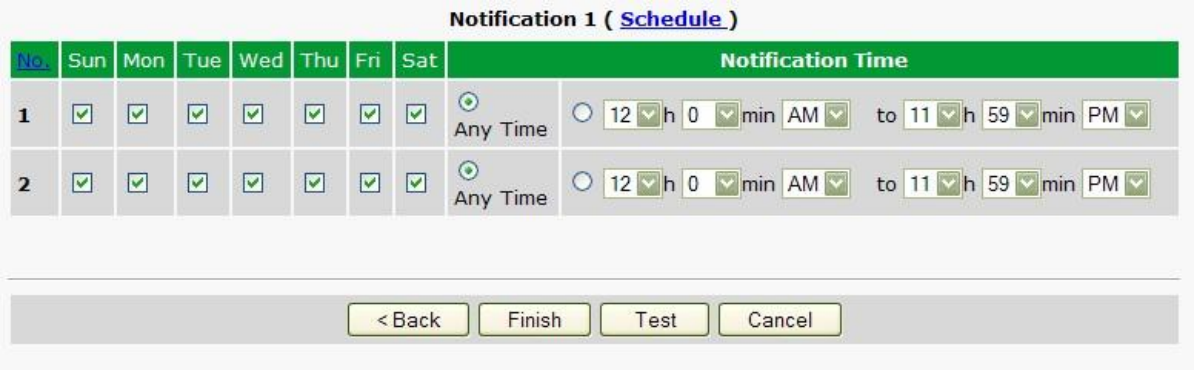
Enter settings for your SNMP Trap server

SNMP Notification	
SNMP Trap Server IP	The SNMP trap manager's IP address.
Trap Port No.	The SNMP port (UDP port) set by the SNMP trap manager to

SNMP Notification	
	receive traps, usually set to 162.
Trap Community	Community name for SNMP TRAP requests.
Trap Type	Indicate whether you would like to send SNMPv1 or v2c traps

Field descriptions on the SNMP Notification configuration screen

4. Then Set the schedule determining when this particular notification is to be sent.



The Schedule creation screen

Notification Scheduling	
Days of the week	From either Schedule 1 or 2, check which days you want to receive notifications.
Any Time	Select to tell the NetGuardian 480 G3 you want to receive alarm notifications at any time for the day(s) you've selected.
Notification Time	Instead of "Any Time", use these fields to only send alarm notifications during certain hours on the day(s) you've selected.

Field descriptions for the SNMP Notification Scheduling screen

Click **Finish** to save the notification.

8.2.6 Alarms

If your Remote Power Switch was built with the alarming option (16 discrete alarms, 2 control relays, and 4 analog inputs), you can configure your unit's discrete alarms from the **Edit Menu > Alarms** screen. If your unit did not come with additional alarms, the Alarms screen will show only your unit's system alarms. For more information on System Alarms, see the following section. From here you can set descriptions for each point, what notifications to send for each point, and qualification timers for each alarm.

Configure your unit's discrete alarms from the Base Alarms Screen

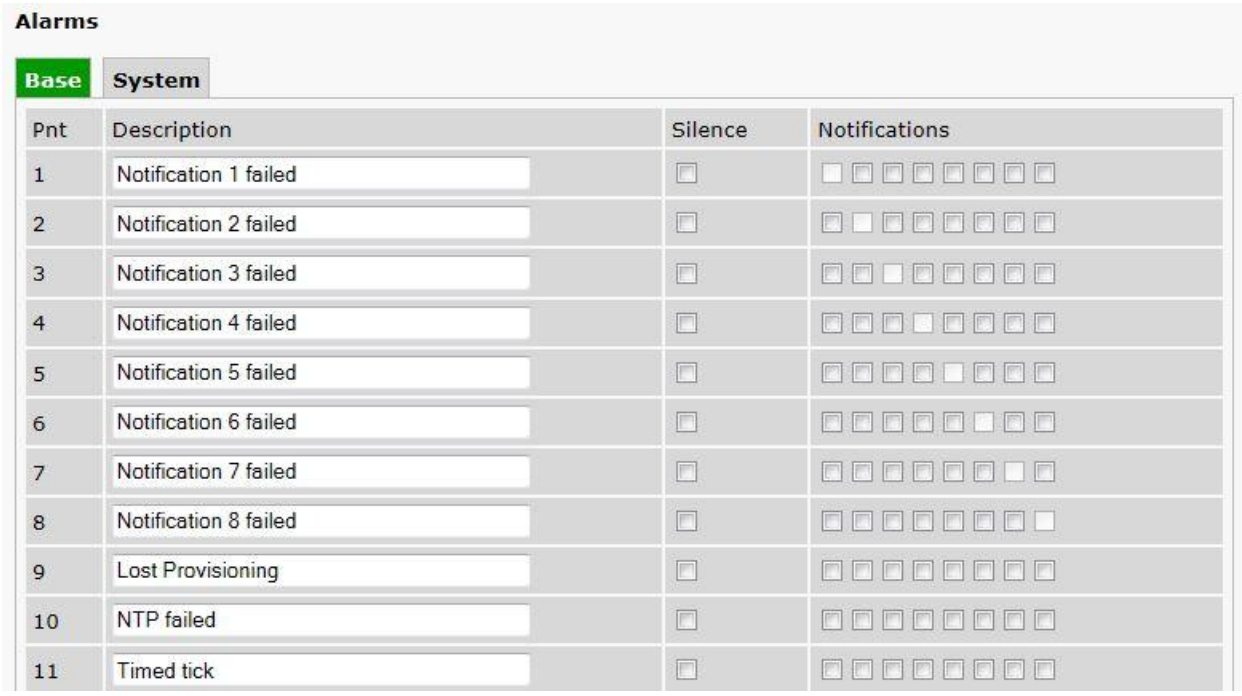
The **Pnt** field indicates the alarm point you're editing. To configure your base discrete alarms, enter information into the appropriate fields for each point:

Field	Description
Description	Enter a description of the alarm point
Rev	Check this box to reverse the polarity of the alarm. (Set and clear alarm conditions will be reversed.)
Notifications	Check the boxes, 1-8, left to right, to indicate which notifications you would like sent for the alarm.
Qual Time	Set the amount of time an alarm state must be present to qualify as an alarm. Valid entries are 1-127, for seconds (s), minutes (m), or hours (h).
Qual Type	Determine for which alarm states the **Qual Time** will apply (On Set, On Clear, or Both)

Field descriptions for Base Alarms

8.2.6.1 System Alarms

Clicking on the System tab from the **Alarms** screen will take you to your Remote Power Switch's system alarms. System alarms are housekeeping alarms that are programmed into Remote Power Switch (DC). From here you can change descriptions and set notifications for your unit's system alarms.

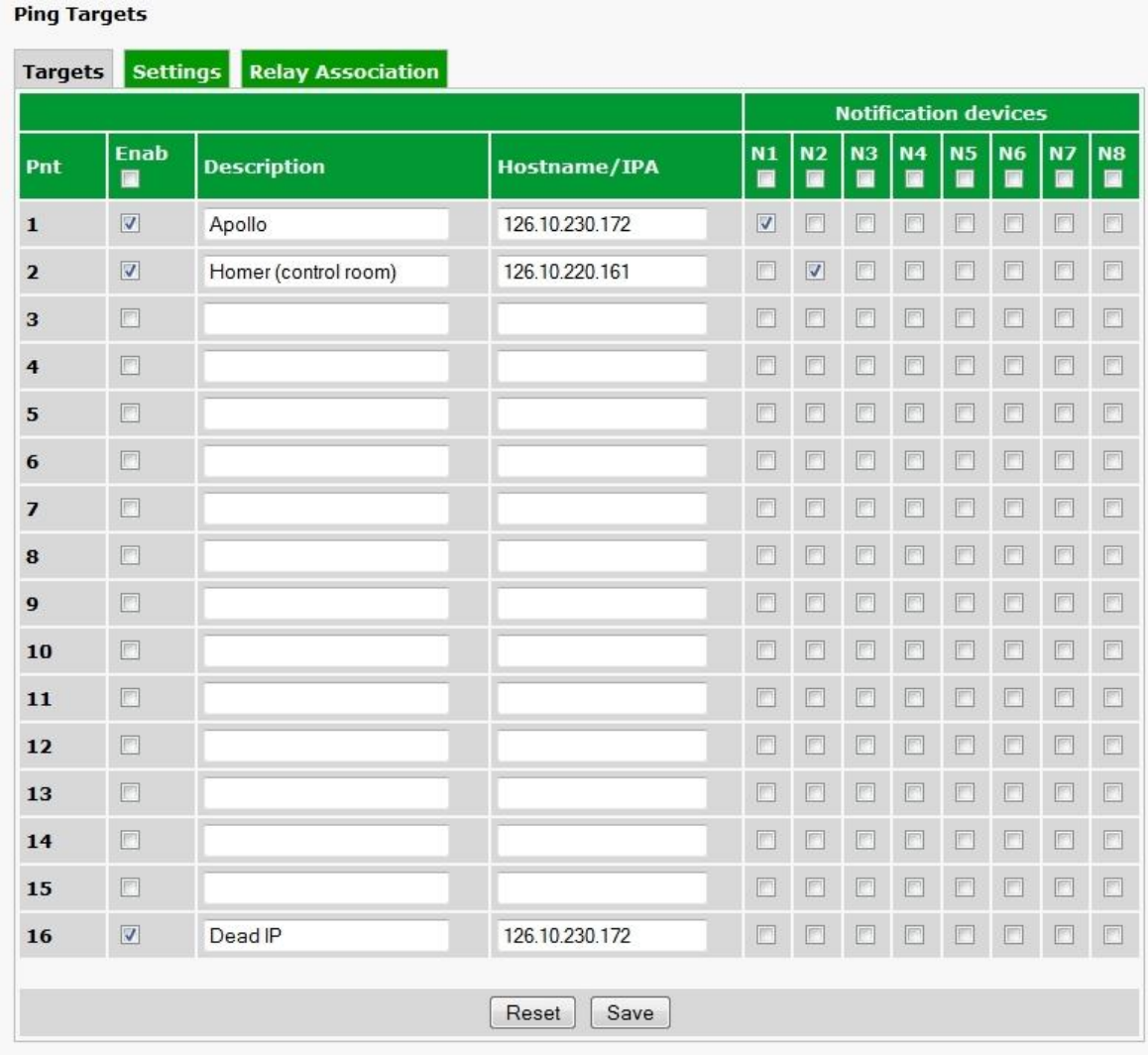


The Edit > Alarms > System menu

Editing System Alarms	
Pnt (Point)	Alarm point number
Description	Non-editable description for this System (housekeeping) Alarm.
Silence	Check this box to ignore the alarm point if it becomes active.
Notification devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point. Check the box in the green bar (top) to have that notification device send a notification for all the System Alarms.

8.2.6.2 Ping Targets

A ping target failure can be set to notify like a discrete alarm (see Notifications). When the ping target fails a number of times greater than the Ping Threshold (see Ping Target Settings) the alarm is set and any selected notifications will be triggered.



The Edit > Ping Targets menu

Provisioning Ping Targets	
Pnt	ID number for the ping target.
Enab	Check this box to enable the ping target.
Description	User-definable description for the ping target.
Server (IP or Hostname)	IP address or hostname of the device you would like to ping.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for ping target.

8.2.6.3 Ping Targets Settings

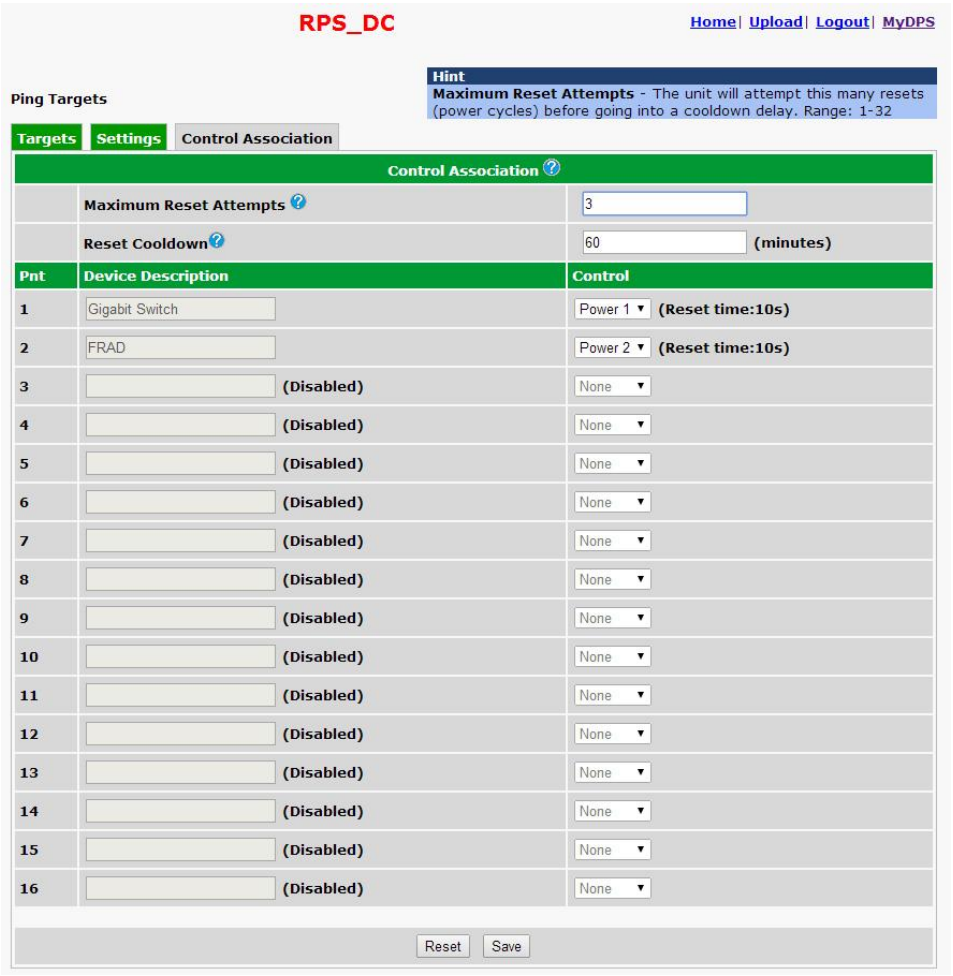
The Ping Target Settings is used to set the frequency of pings, and to define the conditions under which an alarm is set. The RPS DC will ping each enabled target in it's list according to the Ping Cycle Wait Time, so if the Ping Cycle Wait Time is 10 minutes, it will go through the list every 10 minutes. If the unit doesn't receive a response in a number of seconds set under Ping Response Timeout, it will consider this a ping failure. If the RPS DC receives more consecutive ping failures for a device than the Failure Threshold, the alarm will be set and any notifications will be triggered.

The Edit > Ping Targets >Settings menu

Ping Targets Settings	
Ping Cycle Wait Time	Number of minutes the unit waits between pinging the list of target IP's.
Ping Response Timeout	Number of seconds the unit will wait for a response to ping before declaring a ping failure.
Failure Threshold	Number of consecutive ping failures required for an alarm to be set.

8.2.6.4 Ping Targets Control Association

The Control Association is used to automatically attempt to power-cycle a device that can no-longer be pinged. When an alarm is set for a point, the RPS DC will turn off and on that relay to power-cycle the unit. If the alarm status persists, the RPS DC will attempt to power-cycle again after a short waiting period to allow the device to recover. Devices that fail to recover after power-cycling a number of times defined in Reset Attempts Max, will not be cycled again for a period of time defined in the Reset Cooldown. The outlet will remain in the "on" position during the Reset Cooldown period.

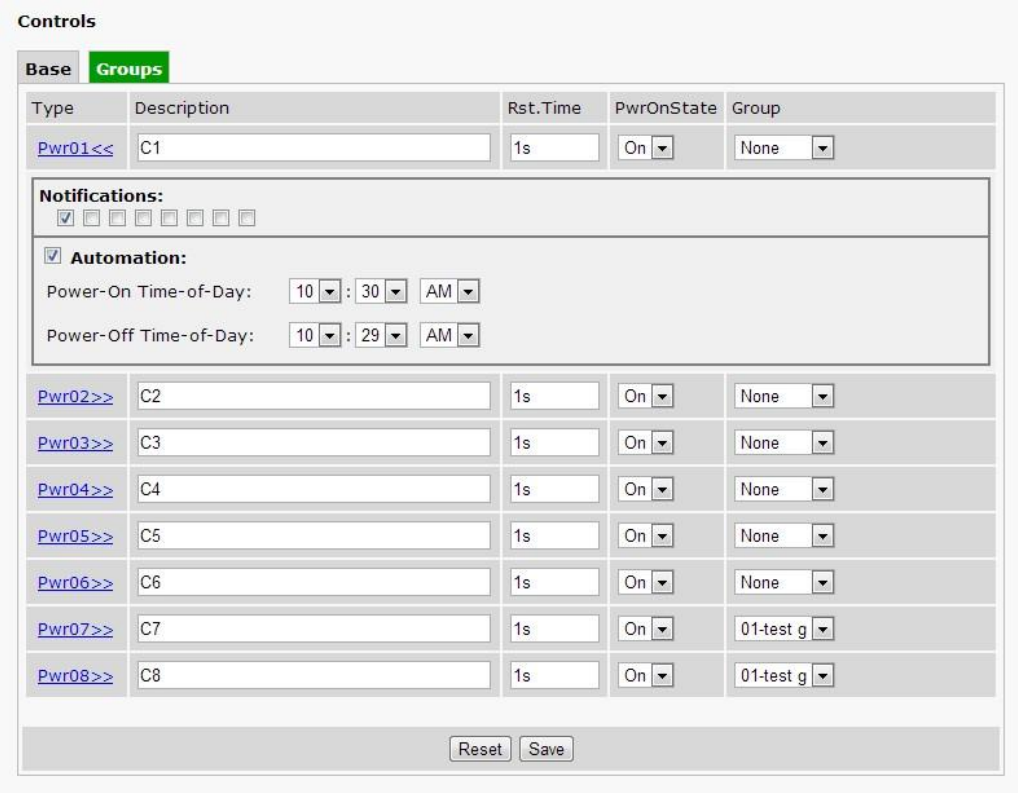


The Edit > Ping Targets > Control Association menu

Ping Control Association	
Reset Attempts Max	Number of times the device will attempt to operate the relay if the alarm state continues
Reset Cooldown	If the unit fails to respond after Reset Attempts Max, no further attempts will be taken for this many minutes.
Description	Description for the ping target set in Edit > Ping Targets > Targets
Control	Control that will be power-cycled on alarm.

8.2.7 Controls

From the **Edit Menu>Controls** option, you can edit your unit's power control options.



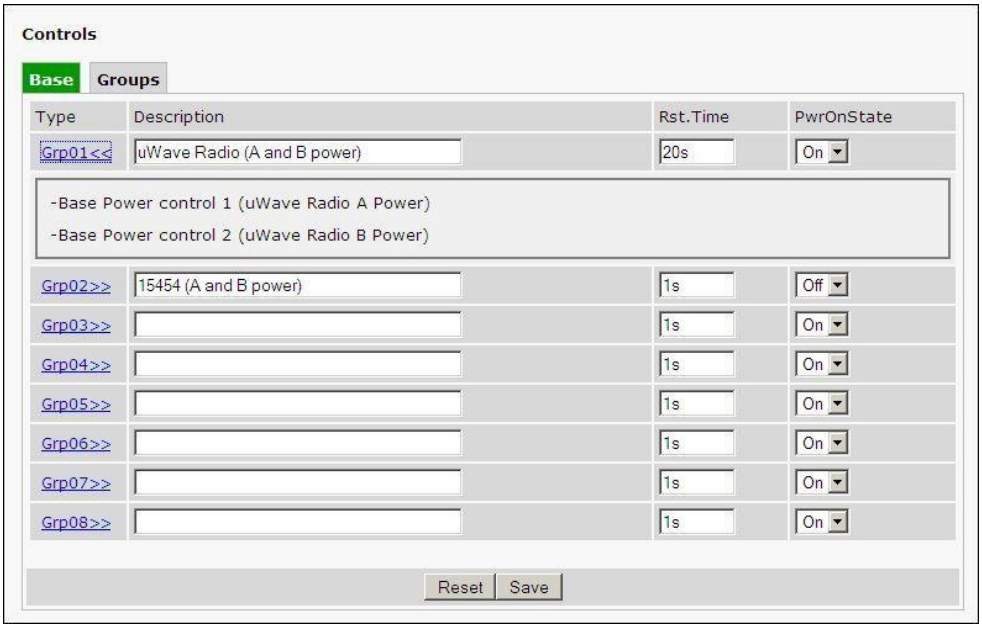
The Edit > Controls menu

Editing Base Controls	
Type	Label indicating which power input/output is connected. Usr01/02 are optional controls that come with the alarm build option. Pwr01-Pwr08 are controls for your power feeds, 1-8. Click the link for any of the fields to reveal notification options.
Description	User-definable description for what this power input/output is controlling.
Rst. Time	Enter the amount of time before the control resets itself. (Momentary time) Example: enter **5m** for 5 minutes.
PwrOnState	If the unit loses power, this is the state, either open (off) or closed (on), that you want the relay to default to.
Group	Enables this control to be part of a group, where you'll have the ability to latch/release (turn power on/off) multiple controls simultaneously. To add a power feed to a group, select the group, 1-8 from the drop-down box.
Notifications	Toggle the checkboxes to indicate which notifications (1-8, left to right) you would like sent when a control is operated.
Automation	Toggle the checkbox to enable Automation. With Automation enabled, the RPS will automatically toggle power controls On and Off according to the time you specify. **Note:** You can still use manual operations when Automation is enabled.

Field descriptions for the Base tab of the Controls screen

8.2.7.1 Control Groups

From the **Groups** tab within the controls menu, you can configure options for each of the unit's groups, 1-8.



The Edit > Groups menu

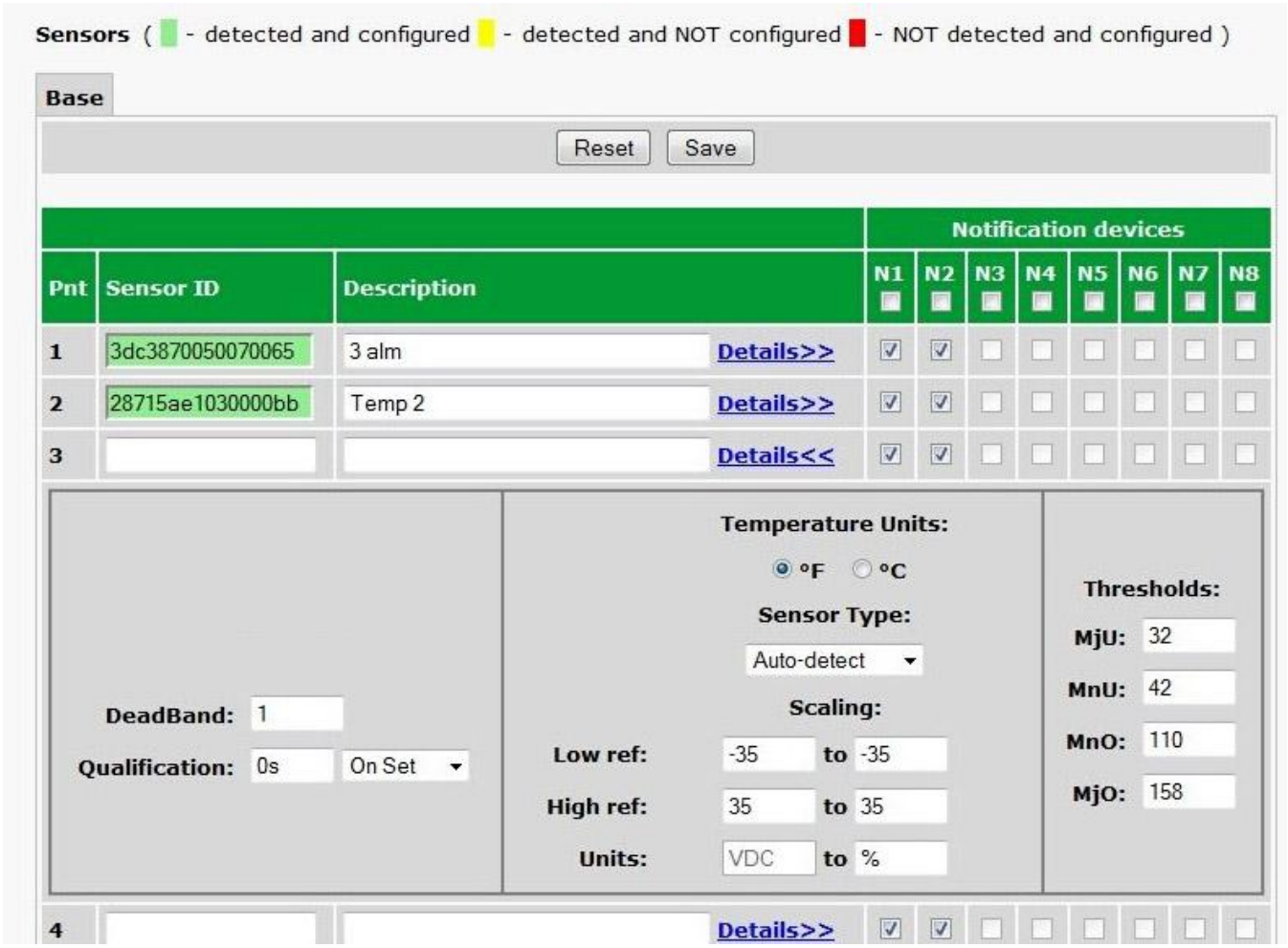
Control Groups	
Type	Label indicating which power input/output is connected. Click the hyperlink to reveal which of your power feeds are associated with any one group.
Description	User-definable description for what this power input/output is controlling.
Reset Time	Enter the amount of time before the control resets itself. (Momentary time) Example: enter **5m** for 5 minutes.
PwrOnState	If the unit is turned off, reset, or loses power, this determines the power state you want the unit to default to when your Remote Power Switch comes back online.

Field descriptions for the Groups tab on the Controls screen

8.2.8 Sensors

The RPS DC supports up to 32 daisy-chained D-Wire sensors via its digital sensor input. Sensors connected to the RPS DC will appear the web interface in the order connected, 1-32. Your RPS DC will automatically recognize the sensor type (temperature, humidity, air flow, etc.) and populate the Sensor ID and Unit (shown below as "Temperature Units") fields. To configure a sensor, simply fill in your description, thresholds, and other fields listed in the table below, then click **Save**.

Note: If your unit includes an internal temperature sensor, it will automatically appear in row 1.



The Edit > Sensors menu

Sensors	
Sensor ID	The ID number found on the sticker on the temperature sensor node. Your RPS DC will automatically detect the sensor ID when you plug a sensor into the unit. The color of the sensor ID field will tell you the status of the connected sensor. • **Green** - The sensor is connected and properly configured • **Yellow** - The sensor is connected but has not yet been configured (fill in your configuration fields and click **Save** to configure the sensor). • **Red** - The sensor is not detected/configured (i.e. a previously configured sensor is no longer connected) To reconfigure the Sensor ID, simply delete any data in this field and click **Save**.

	The unit will refresh the sensor ID on that channel.
Sensor Description	Used to describe the type or location of sensor connected to the RPS DC.
Rev	Checking the reverse button changes negative values to positive, and positive values to negative.
Notifications	Check which notification device(s), 1 through 8, you want to send alarm notifications for this sensor.

Details>>	
Deadband	The additional qualifying value the RPS DC requires above/below your alarm thresholds in order to set an alarm.
Temp Units	The unit(s) of measurement reported by a connected sensor. The field is configurable only if the sensor offers multiple display units (i.e. Fahrenheit or Celsius on a temperature sensor).
Sensor Types	The type of connected sensor. If you are unsure what to choose, leave it on the default setting of Auto-Detect. • **Auto-Detect** • **Humidity** • **Temp w/ LED** • **Temp no LED** • **0 - 60V** • **3 Alarm***
Low Ref	User-definable lower reference/scaling level. This scales the information collected by the sensor (in mA or VDC) to a meaningful unit for the user. For example, for a temperature sensor, the lower input collected by the sensor may be 4mA (for a 4- 20mA sensor), which would correspond to a specific temperature you define in this field.
High Ref	User-definable upper reference/scaling level. This scales the information collected by the sensor (in mA or VDC) to a meaningful unit for the user. For example, for a temperature sensor, the upper input collected by the sensor may be 20mA (for a 4- 20mA sensor), which would correspond to a specific temperature you define in this field.
Units	Units of measurement reported by sensor
MjU (Major Under) **MnU (Minor Under)** **MnO (Minor Over)** **MjO (Major Over)**	Threshold settings that, when crossed, will prompt the RPS DC to set an alarm. Recorded values less than an under value or greater than an over value will cause alarms.

*3 Alarm Notes:
The 3 Alarm Module reuses points that are used to post threshold alarms when sensor gives traditional analog value. There is no support to reverse alarm points in settings like on traditional alarms. You can only have one set of notification devices configured for all 3 alarms. You can only have one description for all 3 alarms. Description will be prepended with "SnrAlmX" string.

8.2.9 Analogs

To configure your unit's analog sensors, click on **Analogs** in green under the edit menu.

The remote power switch can be built with Internal and external temperature sensors monitor the ambient temperature and can be ordered with an additional four analog inputs.

The temperature sensors measure a range of 32° F to 140° F (0° C to 60° C) within an accuracy of ± 1° . The external temperature sensor provides external temperature readings by plugging the optional probe into the temperature port on the back panel.

8.2.9.1 Basic Configuration

Basic analog configuration is performed from the **Analogs** option, listed in green under the Edit Menu. For advanced analog configuration for any of your unit's analogs, click **Details**. See the following section for more information on advanced analog configuration.

The Edit > Analogs menu

Editing Analogs - Basic	
Enb (Enable)	Check this box to enable an analog channel.
Description	User-definable description for the analog channel
Details	Click this link to edit advanced analog settings. For more information, see the following section, **Advanced Configuration**.
Rev (Reverse)	Check this box to reverse the polarity. *(This is not typically used. Reversing polarity is the same as reversing your wiring. Example: -54VDC becomes +54VDC)*
Notification devices	Check which notifications, 1 through 8, you want to send for an analog alarm.

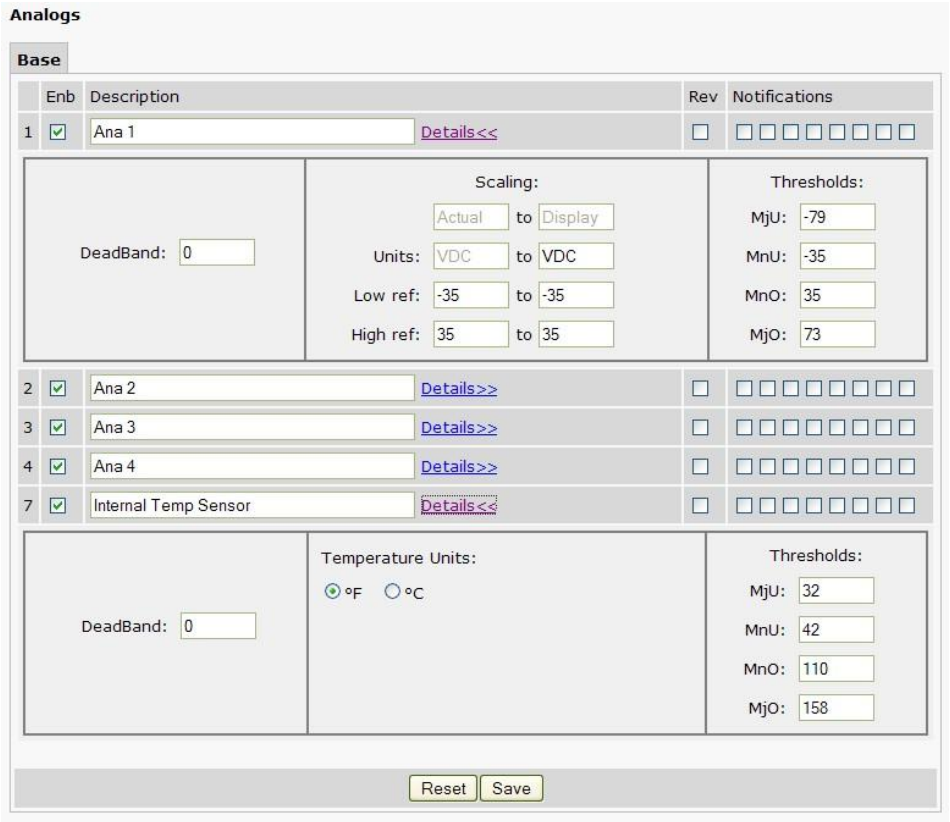
Field descriptions for the Analogs screen

8.2.9.2 Advanced Configuration

Clicking on the **Details** hyperlink reveals more advanced options for your unit's analog sensors. Displayed options are different for standard analog sensors and internal/external temperature sensors. Internal and external temperature sensors for the Remote Power Switch allow control of threshold alarms and temperature units (C or F).

Any of your unit's other analog inputs are set to measure voltage by default and the thresholds are reported as "native units." For example, you may set Channel 3 to measure outside temperature. If you were using a sensor with a measurable temperature range between –4° to 167° Fahrenheit (–20° to 75° Celsius). The voltage for that channel varies between 1 and 5 VDC for that sensor, which is to be reported as ° Fahrenheit (native units) where 1 volt represents –4° Fahrenheit and 5 volts represents 167° Fahrenheit.

Consult the manual for your analog sensor for proper reference values. See the table below for field descriptions to help configure your analog inputs.



Detailed analog settings

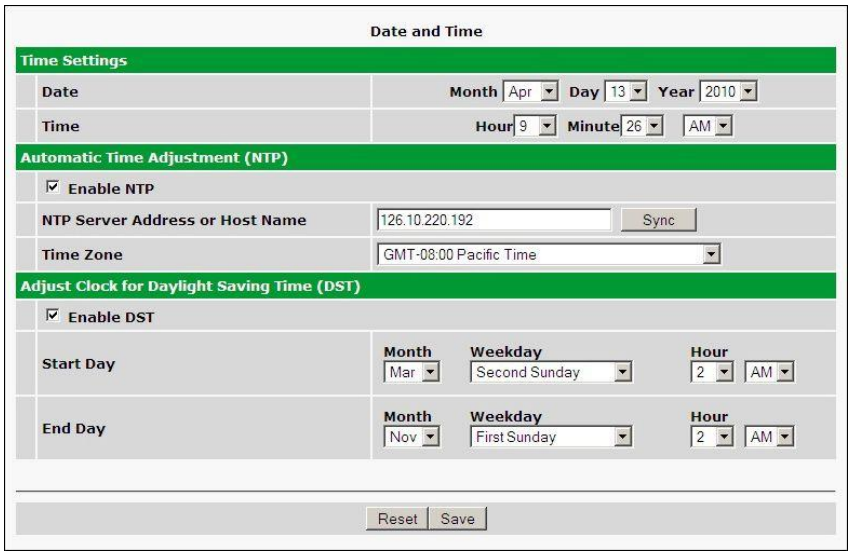
Editing Analogs - Advanced	
DeadBand	The amount (in volts) that the channel needs to go above or below a threshold in order to cause an alarm.
Units	Analog sensors for the Remote Power Switch will always measure voltage. In the right field, input the unit you would like the analog input to report, (F for Fahrenheit Temperature, C for Celsius Temperature, RH for humidity, or VDC for voltage).
Low Ref	In the left field, enter the minimum output value (in VDC) for the analog being configured. In the right field, enter the reference value that corresponds to the voltage listed on the left in the desired display unit.
High Ref	In the left field, enter the minimum output value (in VDC) for the analog being

Editing Analogs - Advanced	
	configured. In the right field, enter the reference value that corresponds to the voltage listed on the left in the desired unit.
Temperature Units (Internal/External Temp Sensors only)	Choose between Fahrenheit and Celsius temperature units.
Thresholds	Threshold settings. These temperature settings are used to indicate the severity of the alarm depending on which threshold values have been passed. Enter values for Major Under (MjU), Minor Under (MnU), Minor Over (MnO), and Major Over (MjO).

Field descriptions for advanced analog options

8.2.10 Date and Time

From the Date Time menu, you will set the internal clock of the Remote Power Switch or synch it with a Network Time server. If your Remote Power Switch should suffer a power failure or you need to reboot, you will have to reset the unit's date and time unless the Network Time option is enabled.

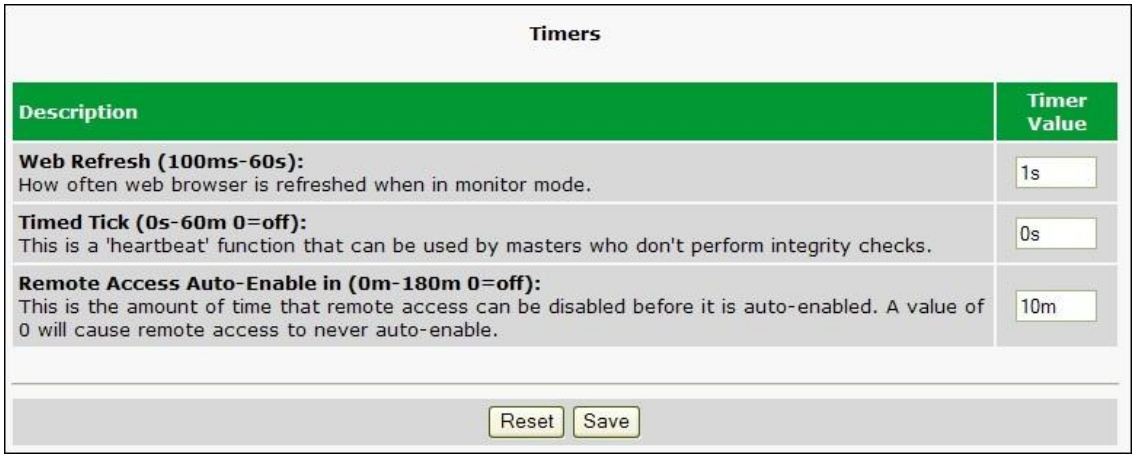


The Edit > Date and Time menu

Time Settings	
Date	Select the current month, day, and year from the drop-down menus.
Time	Select the current hour, minutes, and time of day fro the drop-down menus.
Automatic Time Adjustment (NTP)	
Enable NTP	Check this box to enable Network Time Protocol.
NTP Server Address or Host Name	Enter the NTP server's IP address or host name, then click Sync. Example: north-america.pool.ntp.org **NOTE:** Make sure DNS servers are defined if using Hostname for NTP server.
Time Zone	Select your time zone from the drop-down menu.
Adjust Clock for Daylight Savings Time (DST)	
Enable DST	Check this box to have the Remote Power Switch (DC) observe Daylight Savings.
Start Day	Select the month, weekday, and time when Daylight Savings will begin.
End Day	Select the month, weekday, and time when Daylight Savings will end.

8.2.11 Timers

The Timers menu allows you to change how often certain events within the Remote Power Switch occur.



The Edit > Timers menu

Timers	
Web refresh	How often the web browser is refreshed when in monitor mode.
Timed Tick	The "hearbeat" function that can be used by masters who don't perform integrity checks.
Remote Access Auto-Enable	The amount of time that remote access can be disabled before it is auto-enabled. A value of 0 will cause remote access to never auto-enable.

8.2.12 Reboot

Click on the **Reboot** link from the **Edit** menu will reboot the Remote Power Switch (DC) after writing all changes to NVRAM.

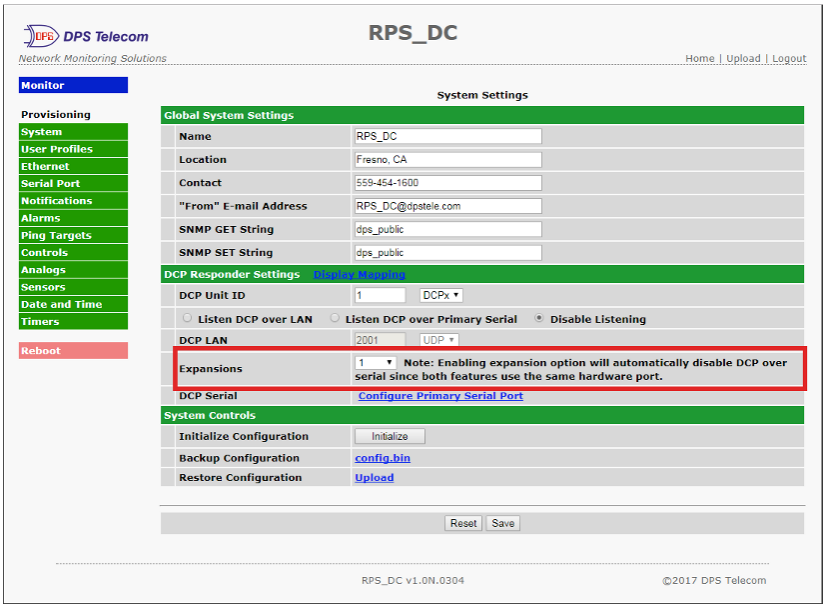
The Edit > Reboot confirmation popup

9 Configuring RPS DC Unit as Expansion

Using a second Remote Power Switch DC unit, you can increase the number of control relays your primary unit has from 8 to 16. Use the following procedure to daisychain your secondary Remote Power Switch unit to your primary. It is important to be aware that any discretes or analogs on the secondary/expansion unit will be ignored. When in this configurations, the only job of the secondary unit is to provide extra controls.

NOTE: If you are not starting with two brand-new units, be sure to initialize both units back to factory settings to avoid polling issues.

1. Power on both units.
2. Daisychain the units using a RJ45 to RJ45 crossover cable (available for order from DPS - see the Optional Accessories section of this User Manual).
3. Configure your Ethernet settings for the Primary unit via LAN or Craft Port (see Initial Configuration section of this User Manual for steps).
   NOTE: No ethernet or web configuration is necessary for the secondary unit.
4. Once configured, log in to the web browser of your primary unit.
   a. Browse to unit's IP address in web browser of choice.
   b. Enter user name (default username: *admin*)
   c. Enter password (default password: *dpstelecom*)
   d. Press enter.



5. Navigate to the *Provisioning* menu.
6. Navigate to the *System Settings* section.
7. Under *DCP Responder Settings*, change the *Expansions* drop down to *1*.
8. Press the *Save* button.
9. *Reboot* your device.

Once your changes have been written, the LED labeled *Primary* on both units will flash red and green, indicating that the connection is made. You can now go to the *Provisioning* menu and open the *Controls* page to edit up to 16 controls. You can also use the Group feature across both units.

NOTE: If the connection is broken (ie the RJ45 crossover cable is damaged, cut, or unplugged), a System Alarm

will be triggered in the primary unit and each unit's *Primary* LED will flash only green.

10 Monitoring Alarms and Issuing Controls

You can monitor your alarms and issue controls from the same web interface you used to configure your Remote Power Switch. The following sections will explain options in the **Monitor Menu** of the web interface.

10.1 Monitoring Alarms

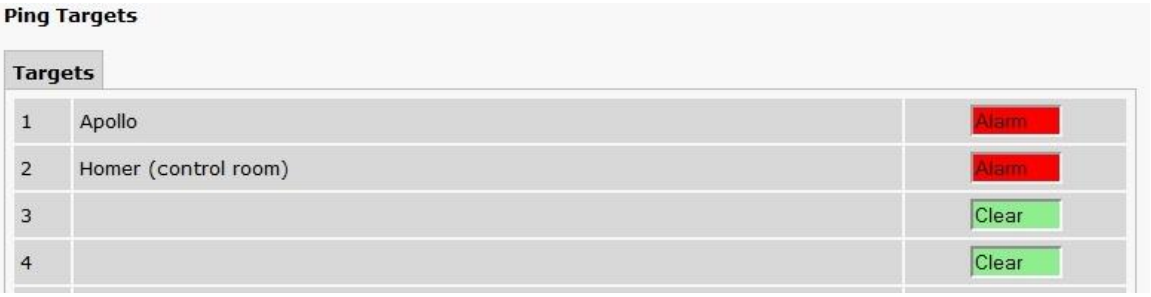
Click on **Alarms** in blue under the Monitor Menu to view the status of your unit's alarms. If your Remote Power Switch was ordered with the discrete alarming option, you can view your 16 discrete alarms here, on the **Base** tab. If your Remote Power Switch was ordered without the discrete alarming option, the Alarms screen will display only **System** alarms under the System tab.

Under the **State** column, the status will appear in red if an alarm has been activated. The status will be displayed in green when the alarm condition is not present.

The Monitor > Alarms screen

10.1.1 Ping Targets

The Ping Targets screen shows ping failure alarms in the same format as the Alarms screen. Under the **State** column, the status will appear in red if an alarm has been activated. The status will be displayed in green when the alarm condition is not present.



The Monitor > Targets screen

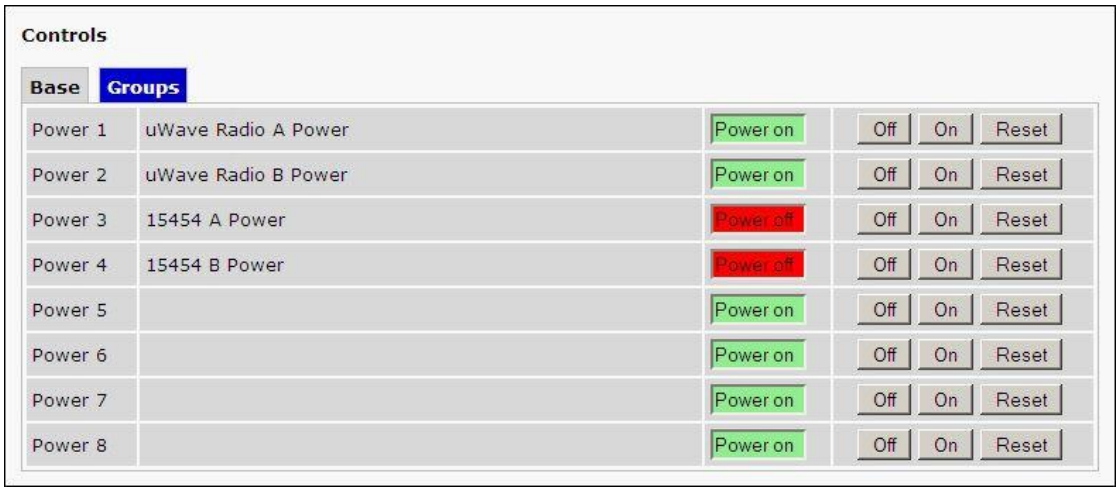
10.2 Operating Controls

Clicking on **Controls** in blue under the Monitor Menu gives the user access to the unit's controls to turn on, off, and reset power outputs.

Next to each power output is a bar indicating the status of the power output.

To issue a control for any of the power outputs, click on a command. Choose between power **Off**, **On**, or **Reset**. Reset time is configurable from the **Edit Menu>Controls** screen.

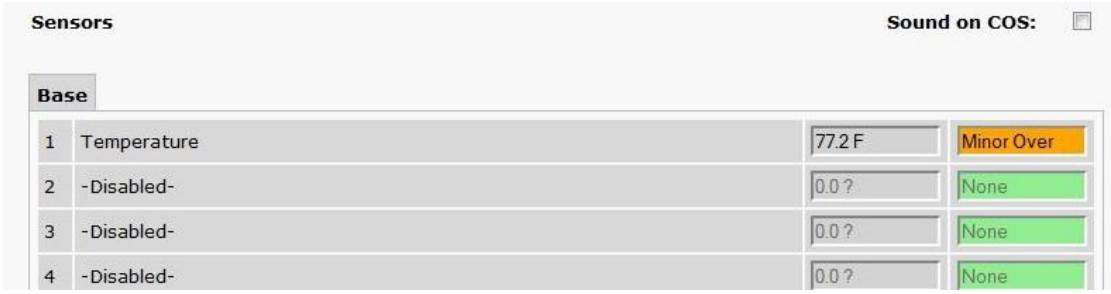
You can operate any of your control **Groups** in the same fashion. Simply click on the **Groups** tab to view your grouped power feeds and control options.



Operate the control relay by clicking on one of the actions in the Commands field.

10.3 Sensors

On the **Monitor > Sensors** menu, you can monitor all attached digital "D-wire" sensors (including the Internal Temperature sensor if your NetGuardian has this option). The most recent sensor measurement will be shown, and any alarm thresholds crossed will be shown in red.

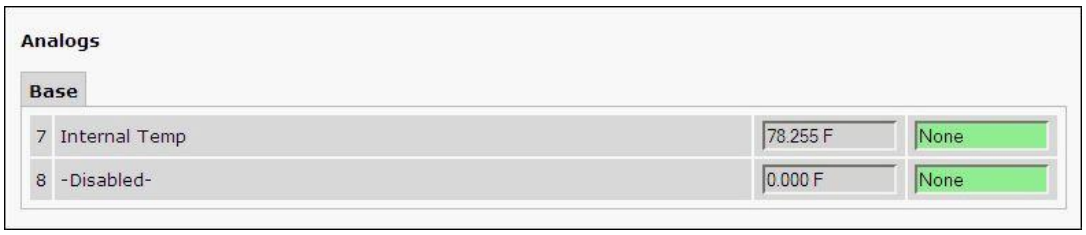


View the current status of all attached sensors in the Monitor > Sensors menu.

10.4 Monitoring Analogs

If you ordered your Remote Power Switch with optional analog sensors, clicking on **Analogs** in blue under the Monitor Menu gives you access to the unit's analog readings.

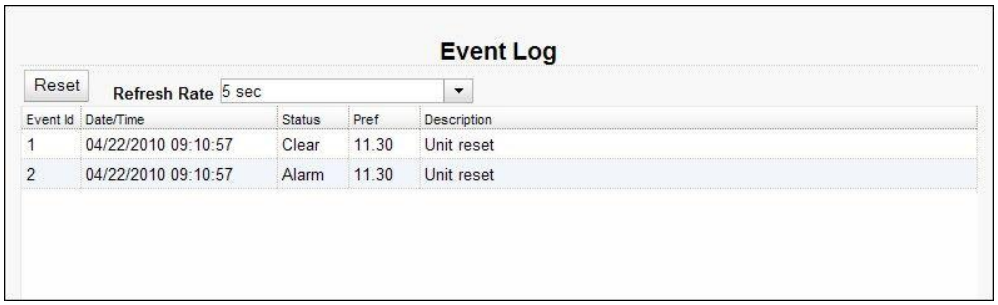
Each of the unit's analog channels will display the current analog reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your analog settings and thresholds (set from the **Edit Menu>Analogs** screen).



Viewing analogs from the web browser.

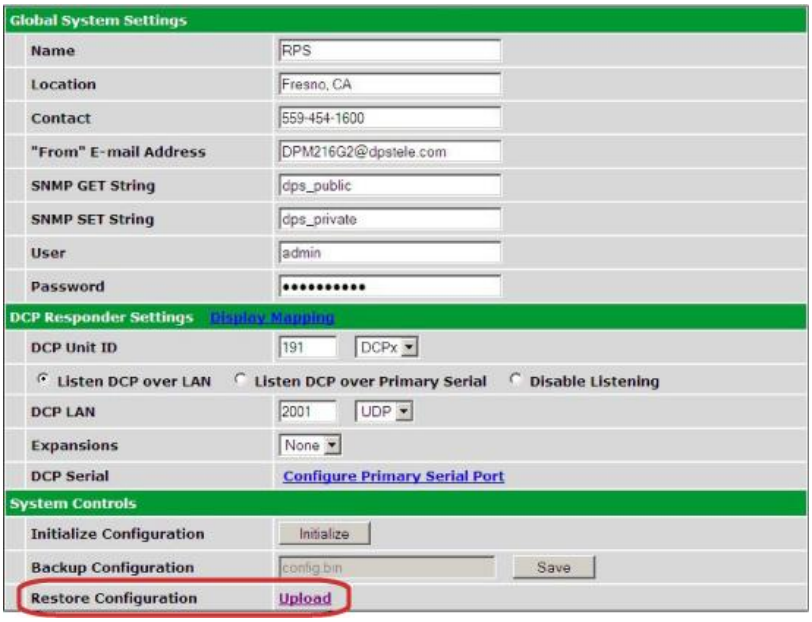
10.5 Viewing the Event Log

To view the unit's history, click on the **Monitor** menu > **Event Log**. The event log displays the most recent 100 events, including unit alarms and issued controls.



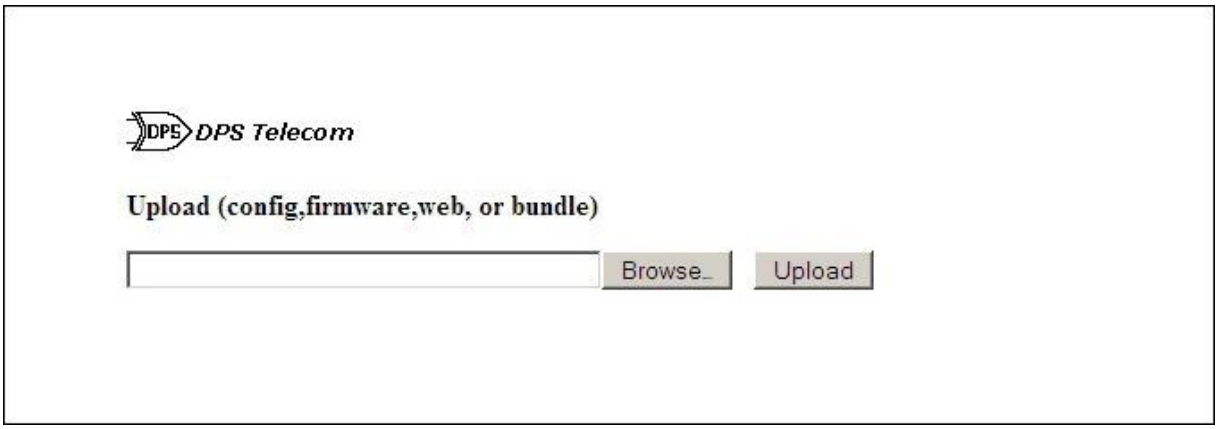
11 Firmware Upgrade

To access the **Firmware Load** screen, click on the **Edit** > **System** menu. At the bottom of this screen, click on the Restore Configuration link located in the **System Controls** section.



The clickable link to upgrade firmware from the Edit > System menu

At the **Firmware Load** screen, simply browse for the firmware update you've downloaded from www.dpstele.com or one that you have saved from the **Backup Configuration** feature. Click **Load**.



Browse for downloaded firmware upgrade

12 SNMP Control of Relays

In order to control the power outputs via SNMP set commands, a SET command must include the following variables:

OID	Numeric OID	Type	Value	Conditions
dpsRTUCPort	1.3.6.1.4.1.2682.1.2.3.1	INTEGER	99	Always
dpsRTUCAddress	1.3.6.1.4.1.2682.1.2.3.2	INTEGER	1	Always
dpsRTUCDisplay	1.3.6.1.4.1.2682.1.2.3.3	INTEGER	1	Always
dpsRTUCPoint	1.3.6.1.4.1.2682.1.2.3.4	INTEGER	1..8	Relay to affect (must be one at a time)
dpsRTUCAction	1.3.6.1.4.1.2682.1.2.3.5	INTEGER	1..3	(1) Turn off Power, (2) Turn on Power, (3) Reset Power

To view the current state of a Power Output, query the dpsRTUAState with the following modifiers; port.address.display.point

For example, to view the state of Power Output 1:
SNMP GET

OID	Numeric OID	Type	Value
dpsRTUAState.99.1.1.1	1.3.6.1.4.1.2682.1.2.5.1.6.99.1.1.1	Display String	(Alarm) Power Off, (Clear) Power On

And Power Output 8:
SNMP GET

OID	Numeric OID	Type	Value
dpsRTUAState.99.1.1.8	1.3.6.1.4.1.2682.1.2.5.1.6.99.1.1.8	Display String	(Alarm) Power Off, (Clear) Power On

13 Reference Section

13.1 Display Mapping

	Description	Port	Address	Point
Display 1	Power Relays 1-8	99	1	1-8
	Expansion Power Relay 1-8	99	1	9-16
	Base Alarms 1-16	99	1	17-32
	Relay Group 1-16	99	1	33-48
	Undefined	99	1	49-64
Display 2	Ping Targets	99	1	1-16
	Undefined	99	1	17-64
Display 3	Analog 1 Minor Under	99	1	1
	Analog 1 Minor Over	99	1	2
	Analog 1 Major Under	99	1	3
	Analog 1 Major Over	99	1	4
	Undefined	99	1	5-8
	Analog 1 Controls	99	1	9-16
	Analog Value	99	1	17-32
	Undefined	99	1	33-64
Display 4	Analog 2 Minor Under	99	1	1
	Analog 2 Minor Over	99	1	2
	Analog 2 Major Under	99	1	3
	Analog 2 Major Over	99	1	4
	Undefined	99	1	5-8
	Analog 2 Controls	99	1	9-16
	Analog Value	99	1	17-32
	Undefined	99	1	33-64
Display 5	Analog 3 Minor Under	99	1	1
	Analog 3 Minor Over	99	1	2
	Analog 3 Major Under	99	1	3
	Analog 3 Major Over	99	1	4
	Undefined	99	1	5-8
	Analog 3 Controls	99	1	9-16
	Analog Value	99	1	17-32
	Undefined	99	1	33-64
Display 6	Analog 4 Minor Under	99	1	1
	Analog 4 Minor Over	99	1	2
	Analog 4 Major Under	99	1	3
	Analog 4 Major Over	99	1	4
	Undefined	99	1	5-8
	Analog 4 Controls	99	1	9-16
	Analog Value	99	1	17-32
	Undefined	99	1	33-64
Display 7	Current for power 1 Minor Under	99	1	1
	Current for power 1 Minor Over	99	1	2
	Current for power 1 Major Under	99	1	3
	Current for power 1 Major Over	99	1	4
	Undefined	99	1	5-8
	Current for power 1 Controls	99	1	9-16
	Current for power 1 Value	99	1	17-32

	Undefined	99	1	33-64
Display 8	Current for power 2 Minor Under	99	1	1
	Current for power 2 Minor Over	99	1	2
	Current for power 2 Major Under	99	1	3
	Current for power 2 Major Over	99	1	4
	Undefined	99	1	5-8
	Current for power 2 Controls	99	1	9-16
	Current for power 2 Value	99	1	17-32
	Undefined	99	1	33-64
Display 9	Internal Temperature Minor Under	99	1	1
	Internal Temperature Minor Over	99	1	2
	Internal Temperature Major Under	99	1	3
	Internal Temperature Major Over	99	1	4
	Undefined	99	1	5-8
	Internal Temperature Control	99	1	9-16
	Internal Temperature Value	99	1	17-32
	Undefined	99	1	33-64
Display 10	External Temperature Minor Under	99	1	1
	External Temperature Minor Over	99	1	2
	External Temperature Major Under	99	1	3
	External Temperature Major Over	99	1	4
	Undefined	99	1	5-8
	External Temperature Control	99	1	9-16
	External Temperature Value	99	1	17-32
	Undefined	99	1	33-64
Display 11 (System Alarms)	User relays 1-2	99	1	1-2
	Undefined	99	1	3-16
	Notification 1 failed	99	1	17
	Notification 2 failed	99	1	18
	Notification 3 failed	99	1	19
	Notification 4 failed	99	1	20
	Notification 5 failed	99	1	21
	Notification 6 failed	99	1	22
	Notification 7 failed	99	1	23
	Notification 8 failed	99	1	24
	Lost Provisioning	99	1	25
	NTP Failed	99	1	26
	Timed Tick	99	1	27
	Serial 1 RcvQ full	99	1	28
	Dynamic memory full	99	1	29
	Unit Reset	99	1	30
	Remote access disabled	99	1	31
	Top Board Failed	99	1	32
	Expansion 1 Failed	99	1	33
	Undefined	99	1	34-35
	Modem Not Responding	99	1	36
	Power A Failed	99	1	37
	Power B Failed	99	1	38
	Fuse Alarm	99	1	39
	Undefined	99	1	40-64
Display 12	Digital Sensor 1 Minor Under	99	1	1
	Digital Sensor 1 Minor Over	99	1	2

	Digital Sensor 1 Major Under	99	1	3
	Digital Sensor 1 Major Over	99	1	4
	Digital Sensor 1 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 1 Control	99	1	9-16
	Digital Sensor 1 Value	99	1	17-32
	Digital Sensor 2 Minor Under	99	1	33
	Digital Sensor 2 Minor Over	99	1	34
	Digital Sensor 2 Major Under	99	1	35
	Digital Sensor 2 Major Over	99	1	36
	Digital Sensor 2 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 2 Control	99	1	41-48
	Digital Sensor 2 Value	99	1	49-64
Display 13	Digital Sensor 3 Minor Under	99	1	1
	Digital Sensor 3 Minor Over	99	1	2
	Digital Sensor 3 Major Under	99	1	3
	Digital Sensor 3 Major Over	99	1	4
	Digital Sensor 3 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 3 Control	99	1	9-16
	Digital Sensor 3 Value	99	1	17-32
	Digital Sensor 4 Minor Under	99	1	33
	Digital Sensor 4 Minor Over	99	1	34
	Digital Sensor 4 Major Under	99	1	35
	Digital Sensor 4 Major Over	99	1	36
	Digital Sensor 4 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 4 Control	99	1	41-48
	Digital Sensor 4 Value	99	1	49-64
Display 14	Digital Sensor 5 Minor Under	99	1	1
	Digital Sensor 5 Minor Over	99	1	2
	Digital Sensor 5 Major Under	99	1	3
	Digital Sensor 5 Major Over	99	1	4
	Digital Sensor 5 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 5 Control	99	1	9-16
	Digital Sensor 5 Value	99	1	17-32
	Digital Sensor 6 Minor Under	99	1	33
	Digital Sensor 6 Minor Over	99	1	34
	Digital Sensor 6 Major Under	99	1	35
	Digital Sensor 6 Major Over	99	1	36
	Digital Sensor 6 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 6 Control	99	1	41-48
	Digital Sensor 6 Value	99	1	49-64
Display 15	Digital Sensor 7 Minor Under	99	1	1
	Digital Sensor 7 Minor Over	99	1	2
	Digital Sensor 7 Major Under	99	1	3
	Digital Sensor 7 Major Over	99	1	4
	Digital Sensor 7 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 7 Control	99	1	9-16
	Digital Sensor 7 Value	99	1	17-32

	Digital Sensor 8 Minor Under	99	1	33
	Digital Sensor 8 Minor Over	99	1	34
	Digital Sensor 8 Major Under	99	1	35
	Digital Sensor 8 Major Over	99	1	36
	Digital Sensor 8 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 8 Control	99	1	41-48
	Digital Sensor 8 Value	99	1	49-64
Display 16	Digital Sensor 9 Minor Under	99	1	1
	Digital Sensor 9 Minor Over	99	1	2
	Digital Sensor 9 Major Under	99	1	3
	Digital Sensor 9 Major Over	99	1	4
	Digital Sensor 9 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 9 Control	99	1	9-16
	Digital Sensor 9 Value	99	1	17-32
	Digital Sensor 10 Minor Under	99	1	33
	Digital Sensor 10 Minor Over	99	1	34
	Digital Sensor 10 Major Under	99	1	35
	Digital Sensor 10 Major Over	99	1	36
	Digital Sensor 10 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 10 Control	99	1	41-48
	Digital Sensor 10 Value	99	1	49-64
Display 17	Digital Sensor 11 Minor Under	99	1	1
	Digital Sensor 11 Minor Over	99	1	2
	Digital Sensor 11 Major Under	99	1	3
	Digital Sensor 11 Major Over	99	1	4
	Digital Sensor 11 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 11Control	99	1	9-16
	Digital Sensor 11 Value	99	1	17-32
	Digital Sensor 12 Minor Under	99	1	33
	Digital Sensor 12 Minor Over	99	1	34
	Digital Sensor 12 Major Under	99	1	35
	Digital Sensor 12 Major Over	99	1	36
	Digital Sensor 12 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 12 Control	99	1	41-48
	Digital Sensor 12 Value	99	1	49-64
Display 18	Digital Sensor 13 Minor Under	99	1	1
	Digital Sensor 13 Minor Over	99	1	2
	Digital Sensor 13 Major Under	99	1	3
	Digital Sensor 13 Major Over	99	1	4
	Digital Sensor 13 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 13 Control	99	1	9-16
	Digital Sensor 13 Value	99	1	17-32
	Digital Sensor 14 Minor Under	99	1	33
	Digital Sensor 14 Minor Over	99	1	34
	Digital Sensor 14 Major Under	99	1	35
	Digital Sensor 14 Major Over	99	1	36
	Digital Sensor 14 Not Detected	99	1	37
	Undefined	99	1	38-40

	Digital Sensor 14 Control	99	1	41-48
	Digital Sensor 14 Value	99	1	49-64
Display 19	Digital Sensor 15 Minor Under	99	1	1
	Digital Sensor 15 Minor Over	99	1	2
	Digital Sensor 15 Major Under	99	1	3
	Digital Sensor 15 Major Over	99	1	4
	Digital Sensor 15 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 15 Control	99	1	9-16
	Digital Sensor 15 Value	99	1	17-32
	Digital Sensor 16 Minor Under	99	1	33
	Digital Sensor 16 Minor Over	99	1	34
	Digital Sensor 16 Major Under	99	1	35
	Digital Sensor 16 Major Over	99	1	36
	Digital Sensor 16 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 16 Control	99	1	41-48
	Digital Sensor 16 Value	99	1	49-64
Display 20	Digital Sensor 17 Minor Under	99	1	1
	Digital Sensor 17 Minor Over	99	1	2
	Digital Sensor 17 Major Under	99	1	3
	Digital Sensor 17 Major Over	99	1	4
	Digital Sensor 17 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 17 Control	99	1	9-16
	Digital Sensor 17 Value	99	1	17-32
	Digital Sensor 18 Minor Under	99	1	33
	Digital Sensor 18 Minor Over	99	1	34
	Digital Sensor 18 Major Under	99	1	35
	Digital Sensor 18 Major Over	99	1	36
	Digital Sensor 18 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 18 Control	99	1	41-48
	Digital Sensor 18 Value	99	1	49-64
Display 21	Digital Sensor 19 Minor Under	99	1	1
	Digital Sensor 19 Minor Over	99	1	2
	Digital Sensor 19 Major Under	99	1	3
	Digital Sensor 19 Major Over	99	1	4
	Digital Sensor 19 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 19 Control	99	1	9-16
	Digital Sensor 19 Value	99	1	17-32
	Digital Sensor 20 Minor Under	99	1	33
	Digital Sensor 20 Minor Over	99	1	34
	Digital Sensor 20 Major Under	99	1	35
	Digital Sensor 20 Major Over	99	1	36
	Digital Sensor 20 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 20 Control	99	1	41-48
	Digital Sensor 20 Value	99	1	49-64
Display 22	Digital Sensor 21 Minor Under	99	1	1
	Digital Sensor 21 Minor Over	99	1	2
	Digital Sensor 21 Major Under	99	1	3

	Digital Sensor 21 Major Over	99	1	4
	Digital Sensor 21 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 21 Control	99	1	9-16
	Digital Sensor 21 Value	99	1	17-32
	Digital Sensor 22 Minor Under	99	1	33
	Digital Sensor 22 Minor Over	99	1	34
	Digital Sensor 22 Major Under	99	1	35
	Digital Sensor 22 Major Over	99	1	36
	Digital Sensor 22 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 22 Control	99	1	41-48
	Digital Sensor 22 Value	99	1	49-64
Display 23	Digital Sensor 23 Minor Under	99	1	1
	Digital Sensor 23 Minor Over	99	1	2
	Digital Sensor 23 Major Under	99	1	3
	Digital Sensor 23 Major Over	99	1	4
	Digital Sensor 23 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 23 Control	99	1	9-16
	Digital Sensor 23 Value	99	1	17-32
	Digital Sensor 24 Minor Under	99	1	33
	Digital Sensor 24 Minor Over	99	1	34
	Digital Sensor 24 Major Under	99	1	35
	Digital Sensor 24 Major Over	99	1	36
	Digital Sensor 24 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 24 Control	99	1	41-48
	Digital Sensor 24 Value	99	1	49-64
Display 24	Digital Sensor 25 Minor Under	99	1	1
	Digital Sensor 25 Minor Over	99	1	2
	Digital Sensor 25 Major Under	99	1	3
	Digital Sensor 25 Major Over	99	1	4
	Digital Sensor 25 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 25 Control	99	1	9-16
	Digital Sensor 25 Value	99	1	17-32
	Digital Sensor 26 Minor Under	99	1	33
	Digital Sensor 26 Minor Over	99	1	34
	Digital Sensor 26 Major Under	99	1	35
	Digital Sensor 26 Major Over	99	1	36
	Digital Sensor 26 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 26 Control	99	1	41-48
	Digital Sensor 26 Value	99	1	49-64
Display 25	Digital Sensor 27 Minor Under	99	1	1
	Digital Sensor 27 Minor Over	99	1	2
	Digital Sensor 27 Major Under	99	1	3
	Digital Sensor 27 Major Over	99	1	4
	Digital Sensor 27 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 27 Control	99	1	9-16
	Digital Sensor 27 Value	99	1	17-32
	Digital Sensor 28 Minor Under	99	1	33

	Digital Sensor 28 Minor Over	99	1	34
	Digital Sensor 28 Major Under	99	1	35
	Digital Sensor 28 Major Over	99	1	36
	Digital Sensor 28 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 28 Control	99	1	41-48
	Digital Sensor 28 Value	99	1	49-64
Display 26	Digital Sensor 29 Minor Under	99	1	1
	Digital Sensor 29 Minor Over	99	1	2
	Digital Sensor 29 Major Under	99	1	3
	Digital Sensor 29 Major Over	99	1	4
	Digital Sensor 29 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 29 Control	99	1	9-16
	Digital Sensor 29 Value	99	1	17-32
	Digital Sensor 30 Minor Under	99	1	33
	Digital Sensor 30 Minor Over	99	1	34
	Digital Sensor 30 Major Under	99	1	35
	Digital Sensor 30 Major Over	99	1	36
	Digital Sensor 30 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 30 Control	99	1	41-48
	Digital Sensor 30 Value	99	1	49-64
Display 27	Digital Sensor 31 Minor Under	99	1	1
	Digital Sensor 31 Minor Over	99	1	2
	Digital Sensor 31 Major Under	99	1	3
	Digital Sensor 31 Major Over	99	1	4
	Digital Sensor 31 Not Detected	99	1	5
	Undefined	99	1	6-8
	Digital Sensor 31 Control	99	1	9-16
	Digital Sensor 31 Value	99	1	17-32
	Digital Sensor 32 Minor Under	99	1	33
	Digital Sensor 32 Minor Over	99	1	34
	Digital Sensor 32 Major Under	99	1	35
	Digital Sensor 32 Major Over	99	1	36
	Digital Sensor 32 Not Detected	99	1	37
	Undefined	99	1	38-40
	Digital Sensor 32 Control	99	1	41-48
	Digital Sensor 32 Value	99	1	49-64

13.2 System Alarm Map

Display	Points	Alarm Point	Description	Solution
11	1-2	User relays 1-2		
	3-16	Undefined		
	17	Notification 1 failed	A notification 1 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	18	Notification 2 failed	A notification 2 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	19	Notification 3 failed	A notification 3 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	20	Notification 4	A notification 4 event, such as a page or	Use RPT filter debug to help diagnose

Display	Points	Alarm Point	Description	Solution
		failed	email, was unsuccessful.	notification problems.
	21	Notification 5 failed	A notification 5 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	22	Notification 6 failed	A notification 6 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	23	Notification 7 failed	A notification 7 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	24	Notification 8 failed	A notification 8 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	25	Lost Provisioning	The internal NVRAM may be damaged. The unit is using default configuration settings.	Use Web or latest version of NGEditG5 to configure unit. Power cycle to see if alarm goes away. May require RMA.
	26	NTP Failed	Communication with Network Time Server has failed.	Try pinging the Network Time Server's IP Address as it is configured. If the ping test is successful, then check the port setting and verify the port is not being blocked on your network.
	27	Timed Tick	Toggles state at constant rate as configured by the Timed Tick timer variable. Useful in testing integrity of SNMP trap alarm reporting.	To turn the feature off, set the Timed Tick timer to 0.
	28	Serial 1 RcvQ full	Serial port 1 (or appropriate serial port number) receiver filled with 8 K of data (4 K if BAC active)	Check proxy connection. The serial port data may not be getting collected as expected.
	29	Dynamic memory full	Not expected to occur.	Call DPS Tech Support (559) 454-1600
	30	Unit Reset		
	31	Remote access disabled		
	32	Top Board Failed	The top board is not responding.	Call DPS Tech Support (559) 454-1600
	33	Expansion 1 Failed		
	34-35	Undefined		
	36	Modem Not Responding	An error has been detected during modem initialization. The modem did not respond to the initialization string.	Remove configured modem initialization string, then power cycle the unit. If alarm persists, try resetting the Modem port from the TTYinterface, or contact DPS for possible RMA.
	37	Power A Failed	Terminal A is no longer receiving power.	Check the power source attached to terminal A.
	38	Power B Failed	Terminal B is no longer receiving power.	Check the power source attached to terminal B.
	39	Fuse Alarm	One of the fuses has failed.	Check and replace fuses as needed.
	40-64	Undefined		

14 Frequently Asked Questions

Here are answers to some common questions from Remote Power Switch (DC) users. The latest FAQs can be found on the Remote Power Switch (DC) support web page, **http://www.dpstele.com.**

If you have a question about the Remote Power Switch (DC), please call us at **(559) 454-1600** or e-mail us at **support@dpstele.com**

14.1 General FAQs

Q. How do I telnet to the Remote Power Switch (DC)?

A. You must use **Port 2002** to connect to the Remote Power Switch (DC). Configure your Telnet client to connect using TCP/IP (**not** "Telnet," or any other port options). For connection information, enter the IP address of the Remote Power Switch (DC) and Port 2002. For example, to connect to the Remote Power Switch (DC) using the standard Windows Telnet client, click Start, click Run, and type "telnet <Remote Power Switch (DC) IP address> 2002."

Q. How do I connect my Remote Power Switch (DC) to the LAN?

A. To connect your Remote Power Switch (DC) to your LAN, you need to configure the unit IP address, the subnet mask and the default gateway. A sample configuration could look like this:
Unit Address: 192.168.1.100
subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1
Save your changes by writing to NVRAM and reboot. Any change to the unit's IP configuration requires a reboot.

Q. When I connect to the Remote Power Switch (DC) through the craft port on the front panel it either doesn't work right or it doesn't work at all. What's going on?

A. Make sure your using the right COM port settings. Your COM port settings should read:
Bits per second: 9600 (9600 baud)
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None
Important! Flow control **must** be set to **none**. Flow control normally defaults to hardware in most terminal programs, and this will not work correctly with the Remote Power Switch (DC).

Q. The LAN link LED is green on my Remote Power Switch (DC), but I can't poll it from my T/Mon.

A. Some routers will not forward packets to an IP address until the MAC address of the destination device has been registered on the router's Address Resolution Protocol (ARP) table. Enter the IP address of your gateway and your T/Mon system to the ARP table.

Q. What characteristics of an alarm point can be configured through software? For instance, can point 4 be used to sense an active-low signal, or point 5 to sense a level or an edge?

A. The unit's standard configuration is for all alarm points to be level-sensed. You **cannot** use configuration software to convert alarm points to TTL (edge-sensed) operation. TTL alarm points are a hardware option that must be specified when you order your Remote Power Switch (DC). Ordering TTL points for your Remote Power Switch (DC) does not add to the cost of the unit What you can do with the configuration software is change any alarm point from "Normal" to "Reversed"

operation. Switching to Reversed operation has different effects, depending on the kind of input connected to the alarm point:

· **If the alarm input generates an active-high signal,** switching to Reversed operation means the Remote Power Switch (DC) will declare an alarm in the absence of the active-high signal, creating the practical equivalent of an active-low alarm.

- **If the alarm input generates an active-low signal,** switching to Reversed operation means the Remote Power Switch (DC) will declare an alarm in the absence of the active-low signal, creating the practical equivalent of an active-high alarm.
- **If the alarm input is normally open,** switching to Reversed operation converts it to a normally closed alarm point.
- **If the alarm input is normally closed,** switching to Reversed operation converts it to a normally open alarm point.

Q. I'm unsure if the voltage of my power supply is within the specified range. How to I test the voltage?

A. Connect the black common lead of a voltmeter to the ground terminal of the battery. Connect the red lead of the voltmeter to the batter's VCD terminal. The voltmeter should read between +12 and +30VDC.

14.2 SNMP FAQs

Q. Which version of SNMP is supported by the SNMP agent on this unit?
A. SNMP v1.

Q. How do I configure the Remote Power Switch (DC) to send traps to an SNMP manager? Is there a separate MIB for the Remote Power Switch (DC)? How many SNMP managers can the agent send traps to? And how do I set the IP address of the SNMP manager and the community string to be used when sending traps?
A. The Remote Power Switch (DC) begins sending traps as soon as the SNMP managers are defined. The Remote Power Switch (DC) MIB is included on the Remote Power Switch (DC) Resource CD. The MIB should be compiled on your SNMP manager. (**Note:** MIB versions may change in the future.) The unit supports 2 SNMP managers, which are configured by entering its IP address in the Trap Address field of Ethernet Port Setup. To configure the community strings, choose SNMP from the Edit menu, and enter appropriate values in the Get, Set, and Trap fields.

Q. Does the Remote Power Switch (DC) support MIB-2 and/or any other standard MIBs?
A. The Remote Power Switch (DC) supports the bulk of MIB-2.

Q. Does the Remote Power Switch (DC) SNMP agent support both Remote Power Switch (DC) and T/MonXM variables?
A. The Remote Power Switch (DC) SNMP agent manages an embedded MIB that supports only the Remote Power Switch (DC)'s RTU variables. The T/MonXM variables are included in the distributed MIB only to provide SNMP managers with a single MIB for all DPS Telecom products.

Q. How many traps are triggered when a single point is set or cleared? The MIB defines traps like "major alarm set/cleared," "RTU point set," and a lot of granular traps, which could imply that more than one trap is sent when a change of state occurs on one point.
A. Generally, a single change of state generates a single trap.

Q. What does "point map" mean?
A. A point map is a single MIB leaf that presents the current status of a 64-alarm-point display in an ASCII-readable form, where a "." represents a clear and an "x" represents an alarm.

Q. The Remote Power Switch (DC) manual talks about control relay outputs. How do I control these from my SNMP manager?
A. The control relays are operated by issuing the appropriate set commands, which are contained in the DPS Telecom MIB.

Q. How can I associate descriptive information with a point for the RTU granular traps?
A. The Remote Power Switch (DC) alarm point descriptions are individually defined using the Web Browser.

Q. My SNMP traps aren't getting through. What should I try?
A. Try these three steps:

1. Make sure that the Trap Address (IP address of the SNMP manager) is defined. (If you changed the Trap Address, make sure you saved the change to NVRAM and rebooted.)
2. Make sure all alarm points are configured to send SNMP traps.
3. Make sure the Remote Power Switch (DC) and the SNMP manager are both on the network. Use the unit's ping command to ping the SNMP manager.

15 Technical Support

DPS Telecom products are backed by our courteous, friendly Technical Support representatives, who will give you the best in fast and accurate customer service. To help us help you better, please take the following steps before calling Technical Support:

1. Check the DPS Telecom website.
You will find answers to many common questions on the DPS Telecom website, at **http://www.dpstele.com/support/**. Look here first for a fast solution to your problem.

2. Prepare relevant information.
Having important information about your DPS Telecom product in hand when you call will greatly reduce the time it takes to answer your questions. If you do not have all of the information when you call, our Technical Support representatives can assist you in gathering it. Please write the information down for easy access. Please have your user manual and hardware serial number ready.

3. Have access to troubled equipment.
Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. Call during Customer Support hours.
Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. The DPS Telecom Technical Support phone number is **(559) 454-1600**.

Emergency Assistance: *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a paging message. You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible.*

16 End User License Agreement

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The purchaser shall fill out the requested information on the Product Warranty Card and mail the card to DPS. This card provides information that helps DPS make product improvements and develop new products.

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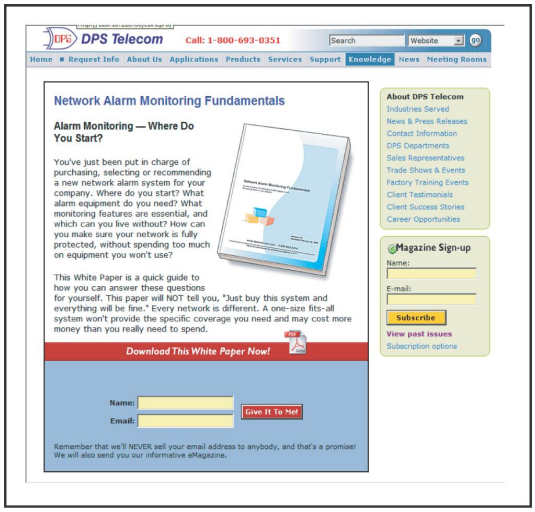

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