DPS Telecom

"Your Partners In Network Alarm Monitoring"

Alarm Point Duplicator 32/16

USER MANUAL

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Revision History

April 3, 2018	Added APD16 model
November 8, 2012	Added Amphenol termination pinouts
February 6, 2012	Updates made to Quick turn up section and product images
January 27, 2012	Initial release

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1 Alarm Point Duplicator Overview

Fig. 1.1 *As an easy-to-install Alarm Point Duplicator, the APD with 32 points effectively duplicates each input alarm into two relay outputs. It is also available in a half-capacity 16-point model.*

Overview

The Alarm Point Duplicator is ideally suited for discrete alarm duplication, where the unit is used to interface a single set of alarm points to multiple alarm remotes or network elements while maintaining isolation between those systems.This telco-grade remote is housed in a durable aluminum chassis that will require the use of two standard rack units for mounting.

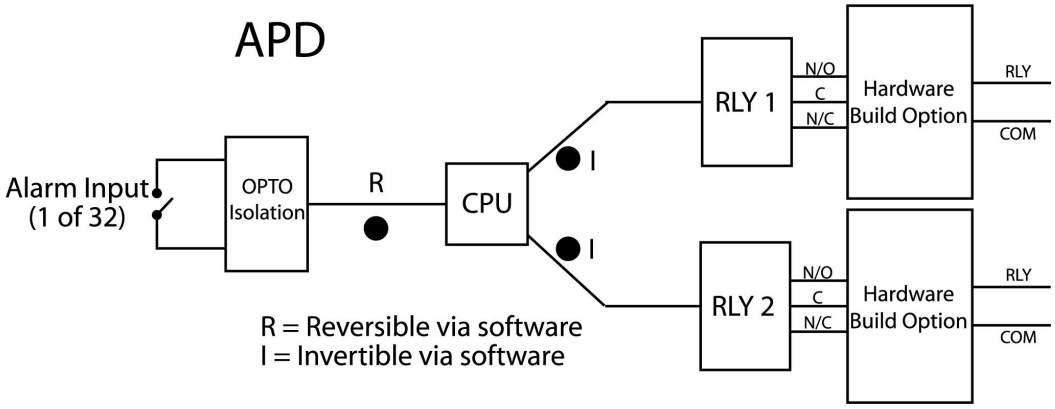


Fig. 1.2 *Logical application diagram of a single of the 32 or 16 total discrete inputs*

Available as either a 32-point or 16-point model

The Alarm Point Duplicator is available as both a 32-input model (APD32) or a 16-input model (APD16). For simplicity, most of this manual refers to the APD32. Several sections (ex. specifications) make reference to both models. Aside from having half as many inputs and outputs, the APD16 is identical to the APD32.

Multiple connectors can be used to securely terminate alarm inputs and relay outputs

On the back panel of the Alarm Point Duplicator the 8-pin screw lug connectors (or amphenol connectors via build option) securely terminate the alarm inputs and relay outputs.

- **32 Discrete Alarm Inputs (16 on the 16-point model)**
- **64 Control Relay Outputs (32 on the 32-point model)**

Visual alarm interface

The front panel LED indicators provide visual indication of alarm point status. Each of the 32 (or 16) inputs has its own LED. LEDs that are on indicate active alarms. LEDs that are off indicate inactive

alarm points.

Upgraded Web Browser Interface

From the device's easy-to-use web interface, you can reverse the input alarm polarities and relay energize state on an individual basis. Additionally, from the web interface you are able to view the status of both the inputs and outputs.

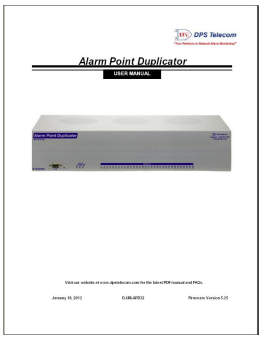
2 Specifications

Discrete Alarm Inputs:	32 (or 16 on APD16)
Control Relay Outputs:	64 (or 32 on APD16)
Relay Options:	Hardwired for NO
	Hardwired for NC
	Jumpers for NO or NC, ships with NO configuration
Protocols:	HTTP, Telnet, ICMP, DCPX, SNMPv1, SNMPv2c
Dimensions:	3.47" H x 17.026 W x 7.336" D
	(8.81 cm x 43.25 cm x 18.63 cm)
Weight:	3.5 lbs. 3oz. (1.6 kg)
Mounting:	19" or 23" rack mount, 2 RU height
Power Input	
Voltage Options Include:	Dual Feed -48VDC (-36 to -72 VDC)
	-24 VDC
	+24 VDC
	-12 VDC
	+12 VDC
	Wide Range 24/48
	110 or 220 VAC (wall transformer)
Current Draw:	250mA max for -48VDC (idle 50mA max)
GMT Fuse:	3/4 Amp GMT Fuse
Interfaces:	1 RJ45 10BaseT Ethernet port
	1 DB9 front-panel craft port
	24 (or 12) 6-Pin Screw Lug (Option)
	6 (or 3) 50-Pin Amphenol Connectors (Option)
Visual Interface:	36 (or 20) Front Panel LEDs
	5 Back Panel LEDs
Operating Temperature:	32° to 140° F (0° to 60° C)
Operating Humidity:	0% to 95% non-condensing
RoHS:	5/6
MTBF:	60 years
Windows Compatibility:	Windows XP, Vista, 7 32/64 bit or newer

3 Shipping List

Please make sure all of the following items are included with your Alarm Point Duplicator. 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**.

Alarm Point Duplicator
D-PK-APD32



Alarm Point Duplicator User Manual
D-UM-APD32

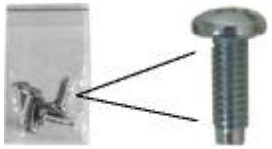
6 ft. DB9M-DB9F Download Cable
D-PR-045-10A-04

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

23" Rack Ears
D-CS-325-10A-01

X2
19" Rack Ears
D-CS-325-10A-00

x8
3/8" Ear Screws and Lock Washers
2-000-60375-05



x4
Rack Screws
1-000-12500-06

x4
Alternate Rack Screws
2-820-80750-03

Pads
2-015-00030-00

x 3
3/4-Amp GMT Fuses
2-741-00750-00

x 2
Lg. Power Connectors
(Main Power)
2-820-35102-00

x 2
Grounding Lug Nuts
2-002-01420-00

Optional

x 24
Terminal Block, 8 Pt
2-821-10835-00

4 Installation

4.1 Tools Needed

To install the Alarm Point Duplicator, you'll need the following tools:

Phillips No. 2 Screwdriver

Small Standard No. 2 Screwdriver

PC with terminal emulator,
such as HyperTerminal

4.2 Mounting

Fig. 4.1 *The Alarm Point Duplicator can be flush or rear-mounted*

The compact Alarm Point Duplicator occupies two standard rack units. The Alarm Point Duplicator mounts in a 19" or 23" rack, and can be mounted on the right or left, in the flush-mount or rear mount locations, as shown in Fig. 4.1.

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

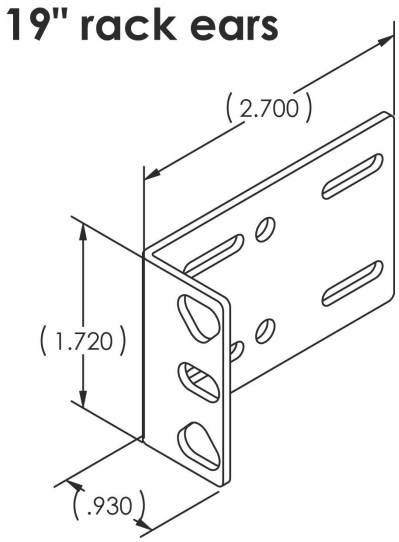


Fig. 4.2

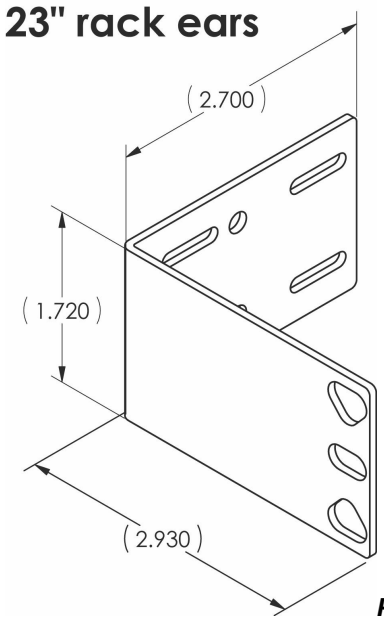


Fig. 4.3

5 Alarm Point Duplicator Back Panel

APD32:

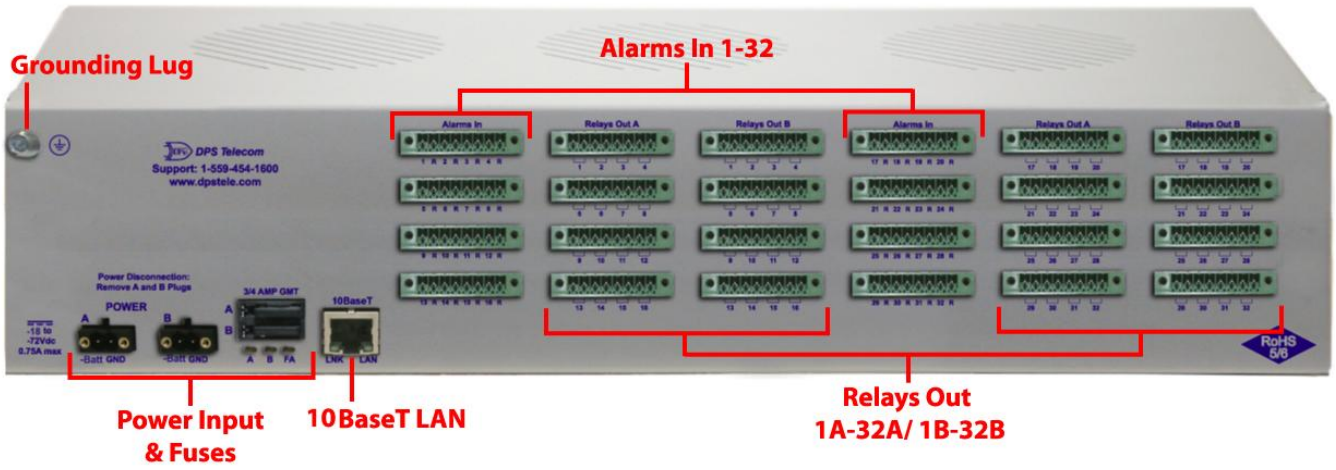


Fig 5.1a *Alarm Point Duplicator back panel connections (APD32)*

APD16:

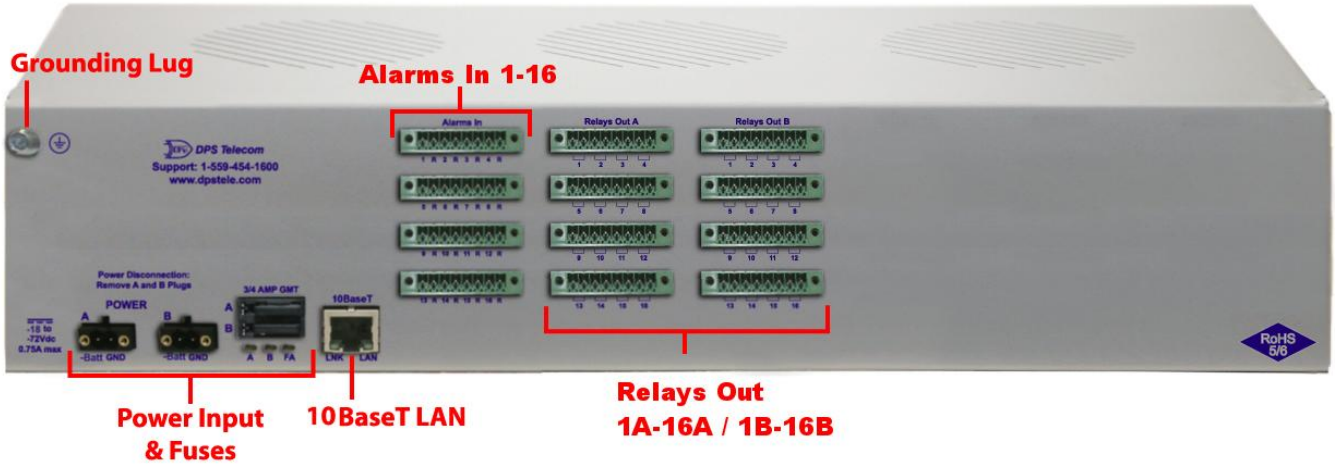


Fig 5.1b *Alarm Point Duplicator back panel connections (APD16)*

5.1 Power Connection

The Alarm Point Duplicator is powered by two screw terminal barrier plug power connectors.

Fig. 5.2 *Screw terminal barrier plugs*

To connect the Alarm Point Duplicator to a power supply, follow these steps:

1. Always use safe power practices when making power connections. Be sure to remove fuses from the fuse distribution panel, as well as the back of the Alarm Point Duplicator, before making your power connections.
2. Use the grounding lug to connect the unit to earth ground. The grounding lug is next to the symbol ⏚. Insert the eyelet of the earth ground cable between the two bolts on the grounding lug (Ground cable not included).
3. Insert a battery ground into the power connector plug's right terminal and tighten the screw; then insert a battery line to the plug's left terminal and tighten its screw.
4. Insert a fuse into the fuse distribution panel and measure voltage. The voltmeter should read between -18 and -58VDC (for the Wide Range build option), –36 and –72VDC (for -48VDC build option), +18 and +36VDC (+24VDC build option) or -18 and -36VDC (-24VDC build option).
5. The power plug can be inserted into the power connector only one way to ensure the correct polarity. Note that the negative voltage terminal is on the left and the GND terminal is on the right.
6. Insert fuse into the Power A fuse slot. The power LED should be lit green. If the LED is off, the power connection may be reversed. To confirm that power is correctly connected, the front panel LEDs will flash RED and GREEN, indicating that the firmware is booting up.
7. Repeat steps 1 -6 for Power B connector.

5.2 LAN Connection

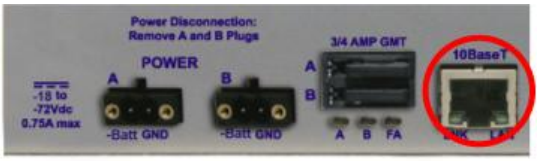


Fig. 5.3 *LAN Port*

To connect the Alarm Point Duplicator 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 illuminate **SOLID**.

5.3 8-Pin Screw Lug Connectors - Option

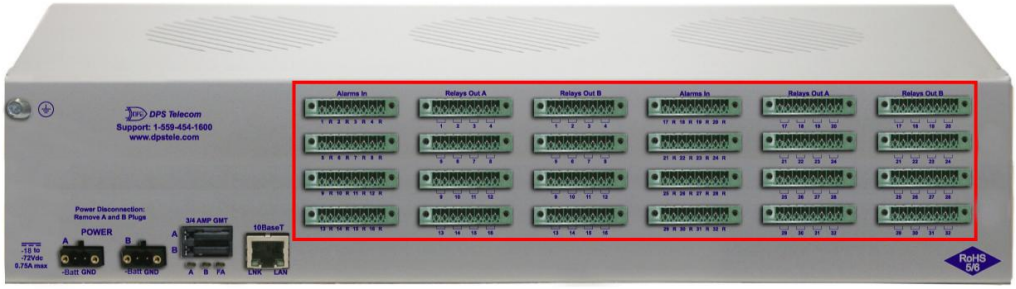


Fig 5.4 *Alarm and Relay Screw Lug Connectors*

On the back panel of the Alarm Point Duplicator 32, there are 24 of the 8-pin screw lug connectors to securely terminate the alarm inputs and relay outputs.

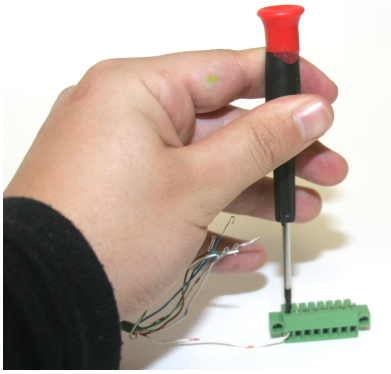


Fig 5.5 Inserting wire

To insert wires into the terminal plugs, first completely loosen the tightening screw on the top of the terminal block. Then insert the wire into the open end of the connector and tighten the screw until the wire is securely fastened.

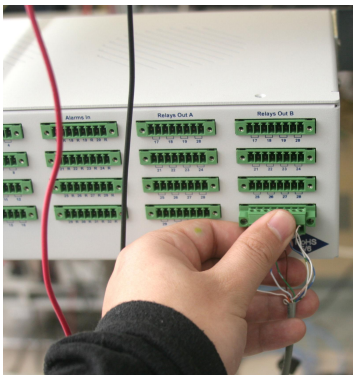


Fig 5.6 Inserting barrier plug

To connect the terminal plug in to the header first verify the correct orientation of the connectors and insert the terminal plug into the header. To securely fasten the connectors tighten the locking screws on both sides of the terminal plug.

5.4 (APD32) 50-Pin Amphenol Connectors - Option

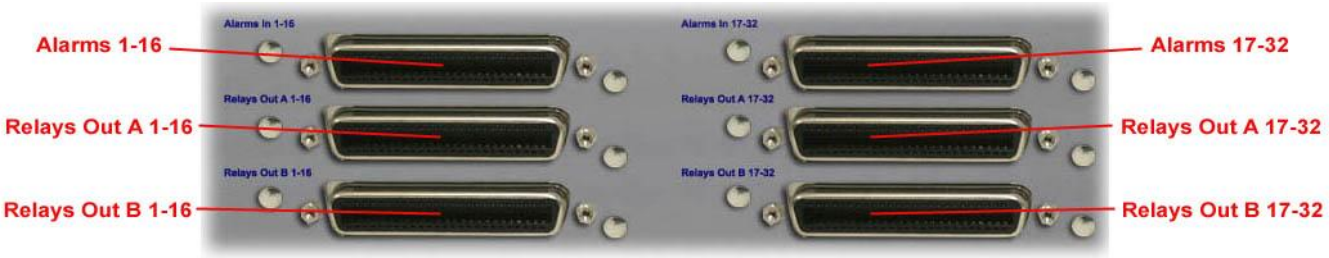


Fig 5.7a *Alarm and Relay Amphenol Connectors*

On the back panel of the Alarm Point Duplicator 32 (with Amphenol termination build option), the six 50-pin female Amphenol connectors securely terminate the alarm inputs and relay outputs. See pinout below:

Alarms 1-16					
	ALM	RTN		ALM	RTN
ALM 1	26	1	ALM 9	34	9
ALM 2	27	2	ALM 10	35	10
ALM 3	28	3	ALM 11	36	11
ALM 4	29	4	ALM 12	37	12
ALM 5	30	5	ALM 13	38	13
ALM 6	31	6	ALM 14	39	14
ALM 7	32	7	ALM 15	40	15
ALM 8	33	8	ALM 16	41	16

Alarms 17-32					
	ALM	RTN		ALM	RTN
ALM 17	26	1	ALM 25	34	9
ALM 18	27	2	ALM 26	35	10
ALM 19	28	3	ALM 27	36	11
ALM 20	29	4	ALM 28	37	12
ALM 21	30	5	ALM 29	38	13
ALM 22	31	6	ALM 30	39	14
ALM 23	32	7	ALM 31	40	15
ALM 24	33	8	ALM 32	41	16

Relays Out A 1-16					
	NO/NC	COM		NO/NC	COM
RLY 1	26	1	RLY 9	34	9
RLY 2	27	2	RLY 10	35	10
RLY 3	28	3	RLY 11	36	11
RLY 4	29	4	RLY 12	37	12
RLY 5	30	5	RLY 13	38	13
RLY 6	31	6	RLY 14	39	14
RLY 7	32	7	RLY 15	40	15
RLY 8	33	8	RLY 16	41	16

Relays Out A 17-32					
	NO/NC	COM		NO/NC	COM
RLY 17	26	1	RLY 25	34	9
RLY 18	27	2	RLY 26	35	10
RLY 19	28	3	RLY 27	36	11
RLY 20	29	4	RLY 28	37	12
RLY 21	30	5	RLY 29	38	13
RLY 22	31	6	RLY 30	39	14
RLY 23	32	7	RLY 31	40	15
RLY 24	33	8	RLY 32	41	16

Relays Out B 1-16					
	NO/NC	COM		NO/NC	COM
RLY 1	26	1	RLY 9	34	9
RLY 2	27	2	RLY 10	35	10
RLY 3	28	3	RLY 11	36	11
RLY 4	29	4	RLY 12	37	12
RLY 5	30	5	RLY 13	38	13
RLY 6	31	6	RLY 14	39	14
RLY 7	32	7	RLY 15	40	15
RLY 8	33	8	RLY 16	41	16

Relays Out B 17-32					
	NO/NC	COM		NO/NC	COM
RLY 17	26	1	RLY 25	34	9
RLY 18	27	2	RLY 26	35	10
RLY 19	28	3	RLY 27	36	11
RLY 20	29	4	RLY 28	37	12
RLY 21	30	5	RLY 29	38	13
RLY 22	31	6	RLY 30	39	14
RLY 23	32	7	RLY 31	40	15
RLY 24	33	8	RLY 32	41	16

Alarm and relay connection pinout

Note: NO/NC refers to the Normally Open / Normally Closed side of the relay, determined by the build option and jumper position (in the case of jumper build option). To determine your build option, refer to the appendix of your original proposal or contact DPS Telecom.

5.5 (APD16) 50-pin Ampehnol Connectors - Option

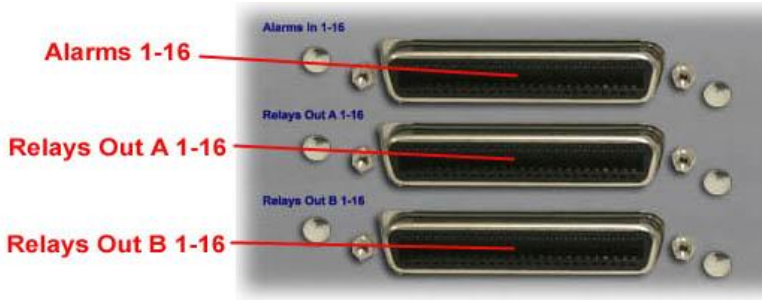


Fig 5.7b *Alarm and Relay Amphenol Connectors*

On the back panel of the Alarm Point Duplicator 16 (with Amphenol termination build option), the three 50-pin female Amphenol connectors securely terminate the alarm inputs and relay outputs. See pinout below:

Alarms 1-16					
	ALM	RTN		ALM	RTN
ALM 1	26	1	ALM 9	34	9
ALM 2	27	2	ALM 10	35	10
ALM 3	28	3	ALM 11	36	11
ALM 4	29	4	ALM 12	37	12
ALM 5	30	5	ALM 13	38	13
ALM 6	31	6	ALM 14	39	14
ALM 7	32	7	ALM 15	40	15
ALM 8	33	8	ALM 16	41	16

Relays Out A 1-16					
	NO/NC	COM		NO/NC	COM
RLY 1	26	1	RLY 9	34	9
RLY 2	27	2	RLY 10	35	10
RLY 3	28	3	RLY 11	36	11
RLY 4	29	4	RLY 12	37	12
RLY 5	30	5	RLY 13	38	13
RLY 6	31	6	RLY 14	39	14
RLY 7	32	7	RLY 15	40	15
RLY 8	33	8	RLY 16	41	16

Relays Out B 1-16					
	NO/NC	COM		NO/NC	COM
RLY 1	26	1	RLY 9	34	9
RLY 2	27	2	RLY 10	35	10
RLY 3	28	3	RLY 11	36	11
RLY 4	29	4	RLY 12	37	12
RLY 5	30	5	RLY 13	38	13
RLY 6	31	6	RLY 14	39	14
RLY 7	32	7	RLY 15	40	15
RLY 8	33	8	RLY 16	41	16

Alarm and relay connection pinout

Note: NO/NC refers to the Normally Open / Normally Closed side of the relay, determined by the build option and jumper position (in the case of jumper build option). To determine your build option, refer to the appendix of your original proposal or contact DPS Telecom.

5.6 Jumper Configuration

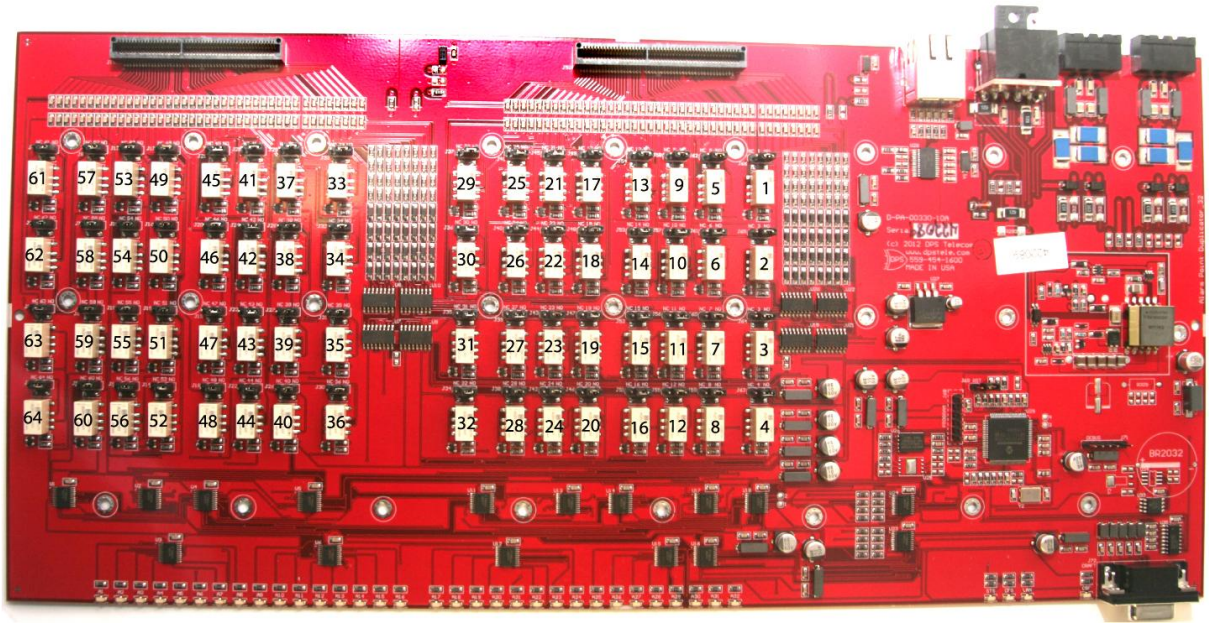


Fig 5.8 Jumper configuration

Alarm	Relay A	Jumper NO/NC	Relay B	Jumper NO/NC
1	1	1	1	17
2	2	2	2	18
3	3	3	3	19
4	4	4	4	20
5	5	5	5	21
6	6	6	6	22
7	7	7	7	23
8	8	8	8	24
9	9	9	9	25
10	10	10	10	26
11	11	11	11	27
12	12	12	12	28
13	13	13	13	29
14	14	14	14	30
15	15	15	15	31
16	16	16	16	32
17	17	33	17	49
18	18	34	18	50
19	19	35	19	51
20	20	36	20	52
21	21	37	21	53
22	22	38	22	54
23	23	39	23	55
24	24	40	24	56
25	25	41	25	57
26	26	42	26	58
27	27	43	27	59
28	28	44	28	60
29	29	45	29	61
30	30	46	30	62
31	31	47	31	63
32	32	48	32	64

Table 5.9 Alarm, Relay and jumper configuration for screw lug connectors

Jumper Configuration (*Only with Jumper Option)

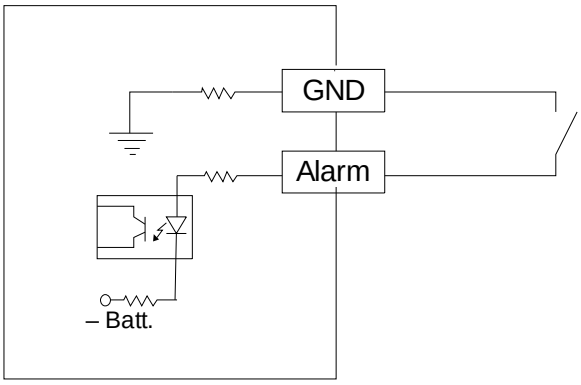
Alarm	Relay A	Jumper NO/NC	Relay B	Jumper NO/NC
1	1	32	1	16
2	2	31	2	15
3	3	30	3	14
4	4	29	4	13
5	5	28	5	12
6	6	27	6	11
7	7	26	7	10
8	8	25	8	9
9	9	24	9	8
10	10	23	10	7
11	11	22	11	6
12	12	21	12	5
13	13	20	13	4
14	14	19	14	3
15	15	18	15	2
16	16	17	16	1
17	17	64	17	48
18	18	63	18	47
19	19	62	19	46
20	20	61	20	45
21	21	60	21	44
22	22	59	22	43
23	23	58	23	42
24	24	57	24	41
25	25	56	25	40
26	26	55	26	39
27	27	54	27	38
28	28	53	28	37
29	29	52	29	36
30	30	51	30	35
31	31	50	31	34
32	32	49	32	33

Table 5.9 Alarm, Relay and jumper configuration for Amphenol Connectors

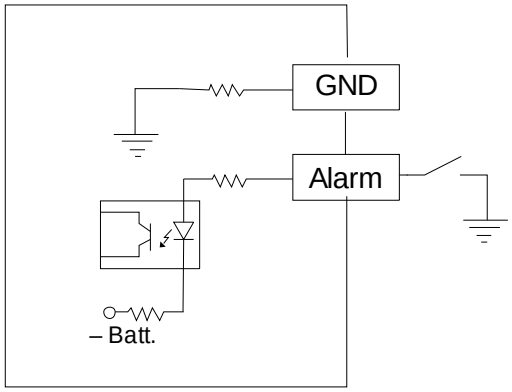
Your build option determines if jumpers are present. If they are not, the unit will be hard-wired for either N/O if N/C on all relays. Check your product number description for your device's configuration.

5.7 Discrete Alarms

Dry Contact



Contact to Ground



Note: Make sure that grounds have a common reference—this is usually done by tying grounds together.

Fig. 5.11 *Discrete alarm points can connect as a dry contact or a contact to ground*

The Alarm Point Duplicator features 32 discrete alarm inputs — also called "digital inputs" or "contact closures". Discrete alarms are either active or inactive, so they're typically used to monitor on/off conditions like power outages, equipment failures, door alarms and so on.

The Alarm Point Duplicators's discrete alarm points are single-lead signals referenced to ground. The ground side of each alarm point is internally wired to ground, so alarm points can connect either as a dry contact or a contact to ground.

In a dry contact alarm: The alarm lead brings a contact to the ground lead, activating the alarm.

In a contact to ground alarm: A single wire brings a contact to an external ground, activating the alarm.

You can reverse the polarity of each individual discrete alarm point, so that the alarm is activated when the contact is open. This is done with a software configuration change.

6 Alarm Point Duplicator Front Panel

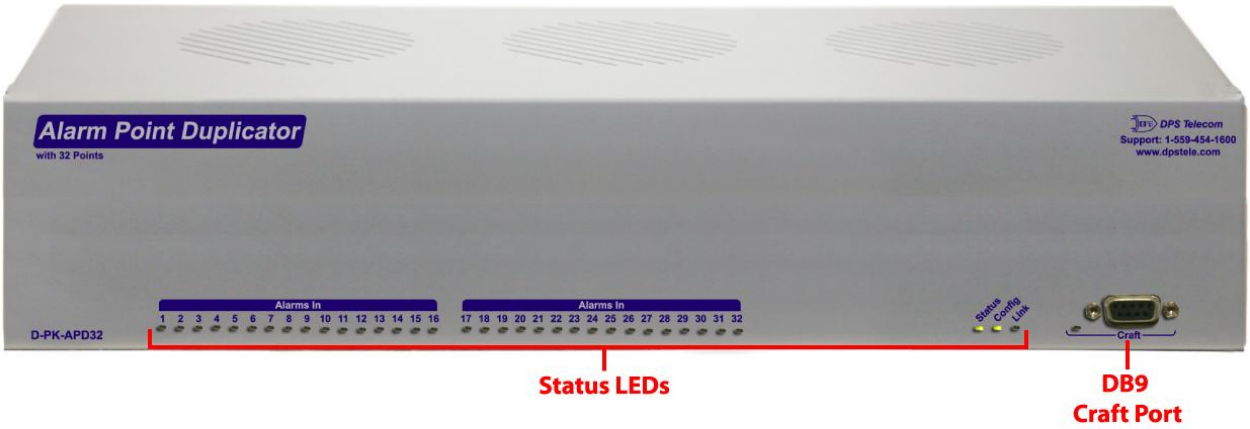
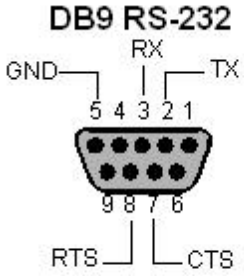


***Fig. 6.1**. Alarm Point Duplicator front panel*
(Alarms In 17-32 are not present on the APD16 model)

6.1 DB9 Craft Port

Use the front-panel DB9 RS-232 craft port to connect the Alarm Point Duplicator to a PC for onsite unit configuration. To connect via the DB9 RS-232 craft port, use a standard DB9M-DB9Fcable.



Pin #	Signal	Description
1		Not connected
2	**TX**	**Transmit data**
3	**RX**	**Recieve Data**
4		Not connected
5	**GND**	**Ground**
6		Not connected
7	**CTS**	**Clear to send**
8	**RTS**	**Request to send**
9		Not connected

***Fig 6.2** DB9 RS-232 Pinouts (**Craft Port Only**)*

7 Quick Start: How to Connect to the Alarm Point Duplicator

Most Alarm Point Duplicator users find it easiest to give the unit an IP address, subnet and gateway through the front serial craft port (TTY interface) to start. Once these settings are saved and you reboot the unit, you can access it over LAN to do the rest of your databasing via the Web Browser interface.

Alternative option: You can skip the TTY interface by using a LAN crossover cable directly from your PC to the Alarm Point Duplicator and access its Web Browser. See the "...via LAN" section of this chapter.

7.1 ...via DB9 Craft Port (using TTY Interface)

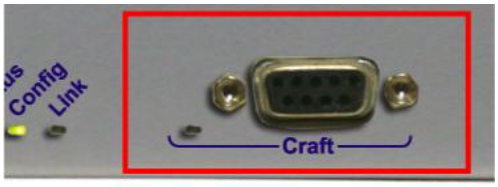


Fig. 7.1 *Alarm Point Duplicator Craft Port*

The simplest way to connect to the Alarm Point Duplicator is over a physical cable connection between your PC's COM port and the Alarm Point Duplicator's craft port.

Select the following COM port options:

- Bits per second: **9600**
- Data bits: **8**
- Parity: **None**
- Stop bits: **1**
- Flow control: **None**

When a connection is established (sometimes accompanied by receipt of a hex byte), press Enter to activate the configuration menu. The default password is 'dpstelecom'.

You can perform basic configuration via the craft port — but if you like, you can connect via the craft port just to configure the Alarm Point Duplicator's Private LAN IP address, and then do the rest of your configuration via a LAN connection.

7.2 ...via LAN

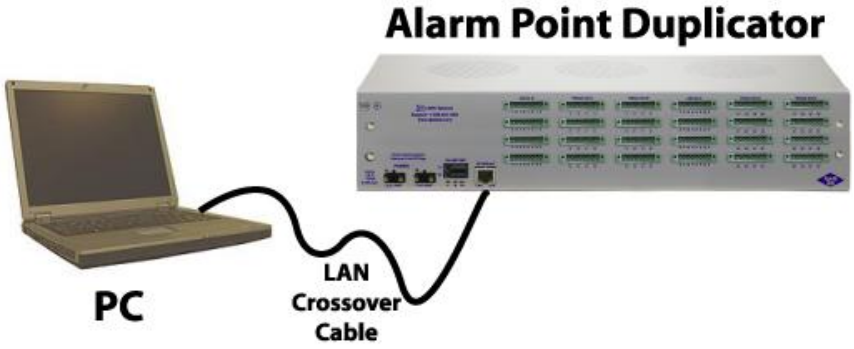


Fig 7.2 *Connection through Ethernet port*

To connect to the Alarm Point Duplicator 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 Alarm Point Duplicator, 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 Alarm Point Duplicator's factory default IP settings. Follow these steps:

1. Get a LAN crossover cable and plug it directly into the Alarm Point Duplicator'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 Alarm Point Duplicator via a Telnet session or via Web browser by using the unit's default IP address of **192.168.1.100**.
6. Provision the Alarm Point Duplicator 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 Alarm Point Duplicator into your LAN and see the "Logging On to the Alarm Point Duplicator" section to continue databasing using the Web Browser.

8 TTY Interface

The TTY interface is the Alarm Point Duplicator's built-in interface for basic configuration. From the TTY interface, you can:

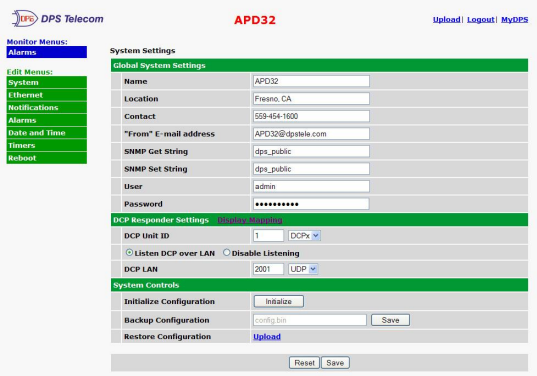
- Edit the IPA, subnet, and gateway
- Set unit back to factory defaults
- Debug and troubleshoot
- Ping other devices on the network

For more advanced configuration tools, please use the Web Browser Interface.

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.

Menu Shortcut Keys
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.

9 Alarm Point Duplicator Web Browser



The Alarm Point Duplicator features a built-in Web Browser Interface that allows you to manage alarms and configure the unit through the Internet or your Intranet. You can quickly set up alarm point descriptions, view alarm status, issue controls, configure paging information, and more using most commonly used browsers.

NOTE: Max # of users allowed to simultaneously access the Alarm Point Duplicator via the Web is 4.

9.1 Logging on to the Alarm Point Duplicator

For Web Interface functionality, the unit must first be configured with some basic network addresses. If this has not been done yet, refer to the section "Quick Start: How to Connect to the Alarm Point Duplicator" for instructions on initial configuration.

1. To connect to the Alarm Point Duplicator 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***".

   Best Practice: DPS Telecom suggests that you change your password before configuring your unit as seen in section 9.1.1 Changing the Default Password.

3. In the left pane, 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.

Fig. 9.1 *Enter your password to enter the Alarm Point Duplicator Web Browser Interface*

9.1.1 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.

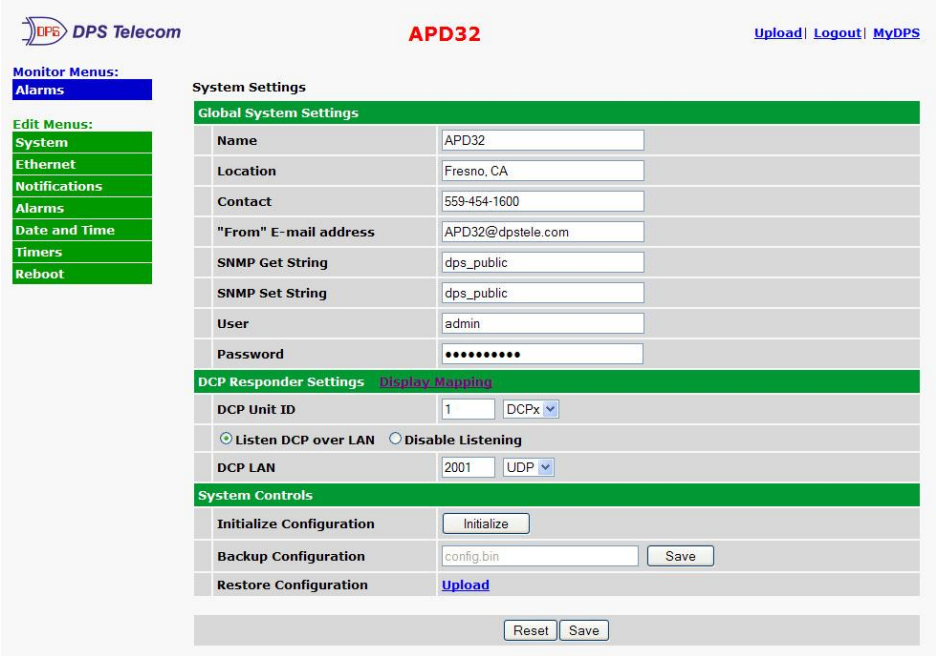


Fig. 9.2 *- Global System Settings section of the Edit > System menu*

NOTE: You will see the following popup when making changes to the Alarm Point Duplicator 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.

Fig. 9.3 *- Commit to NVRAM popup*

10 Alarm Point Duplicator - Quick Turn Up

The next section of this manual will walk you through some of the most common tasks for using the Alarm Point Duplicator. You will learn how to send email notifications to your alarm master- all using the Web browser. For details on entering your settings into each Web browser menu, the section "Edit Menu Field Descriptions."

10.1 Base Alarms

The Alarm Point Duplicator's discrete base and system alarms are configured from the **Edit** > **Alarms** menu. Descriptions for the alarm points, polarity (normal or reversed) and notification type(s) are defined from this menu.

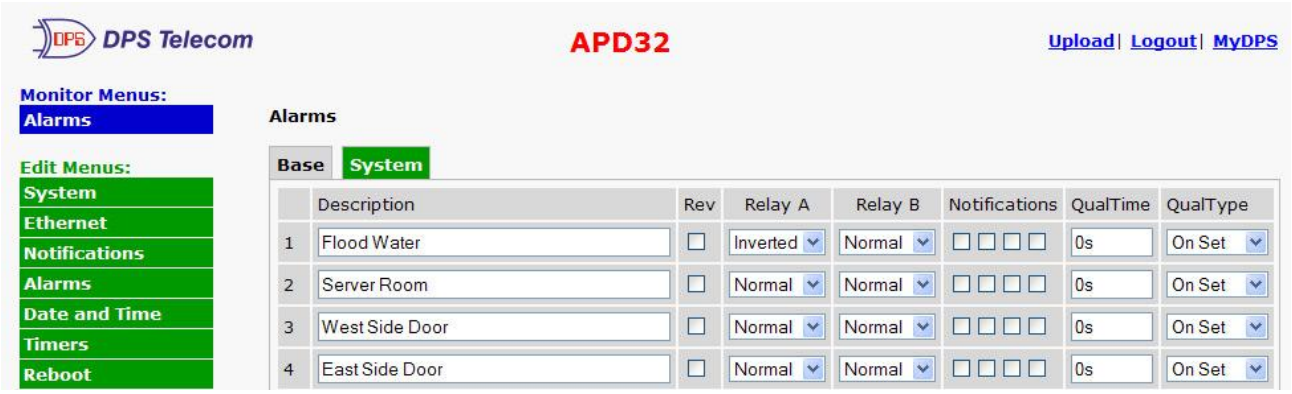


***Fig. 10.1**- The Base Alarm Config Screen*

Editing Base Alarms - Basic	
(first column)	Alarm point number.
Description	User-definable description for the discrete alarm input.
Rev (Reverse)	Reverse: Check this box to reverse the polarity of the alarm point. Left un-checked, this means a normally-open contact closure is a clear condition. When polarity is reversed, a normally-closed alarm point is clear when closed. *Example*: Door with a magnetic door sensor. When the door is closed, the magnetic sensor acts like a closed relay. However, you know this should not trigger an alarm condition. This means you'd want the door alarm reversed in the Alarm Point Duplicator because we are looking for a normally closed condition.
Relay A and Relay B	If **Normal** is selected, when an alarm is active the relay will be latched. When the alarm is inactive the relay will be unlatched. (**Note:** This configuration will be reversed if the build options designate the shunts to be normally closed.)
	If **Inverted** is selected, when an alarm is active the relay will be unlatched. When the alarm is inactive the relay will be latched. (**Note:** This configuration will be reversed if the build options designate the shunts to be normally closed.)
Notifications	Check which notification device(s), 1 through 4 (ordered left to right), you want to send alarm notifications for that alarm point. These notification devices correlate to one of the 4 devices you setup for notification (email, SNMP trap, etc.) Check the box in the green bar (top) to have a notification device send an alarm for all alarm points.
QualTime (Qualification Time)	Enter a number of seconds (ex. "30s" or "15s") that the Alarm Point Duplicator will wait before reporting a change of state (an alarm or clear event). If the alarm/clear state returns back to its previous state before the QualTime has elapsed, no notification will be sent (Enter "0s" to report alarms/clears immediately). By "qualifying" alarms/clears in this way, you can reduce excessive reporting of "flickering" alarm points that set/clear rapidly. Only "real" conditions that exist for a substantial time will be reported.
QualType	Choose whether the QualTime will apply to alarms, alarmsets, clears, or both.

10.2 Monitoring Base Alarms

The "Base" tab of the **Monitor > Alarms** menu provides the status of the base alarms by indicating if an alarm has been triggered. Under the **State** column, the status will appear in red if an alarm has been activated and green when the alarm condition is not present.

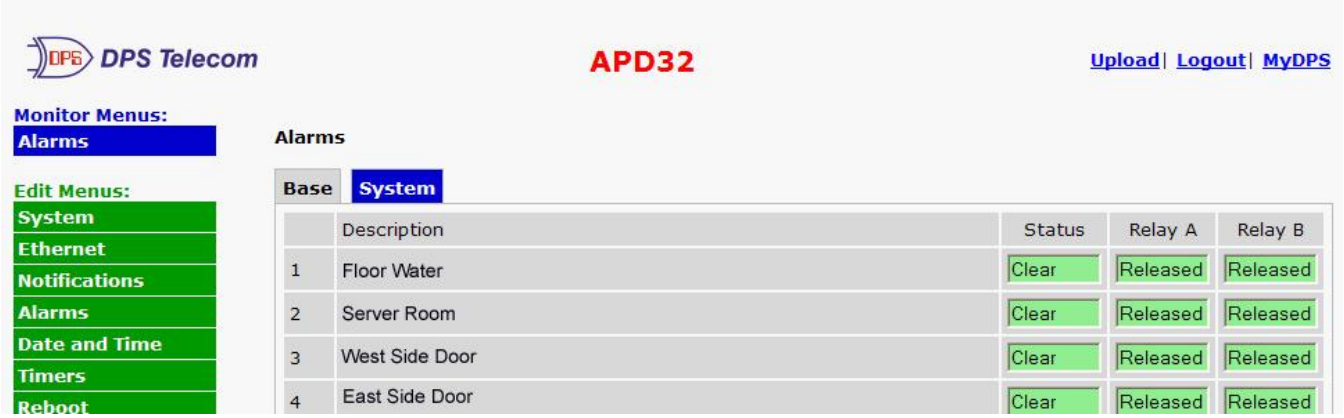


***Fig. 10.2**. Click on "Alarms" in the Monitor menu to see if any base alarms have been triggered.*

10.3 How to Send Email Notifications

1. Click on the **System** button in the **Edit** menu and enter a valid email address in the **"From" Email Address** field. (You may need to check with your IT department to have one created for the unit.) This is the address that will appear in your email as the sender.

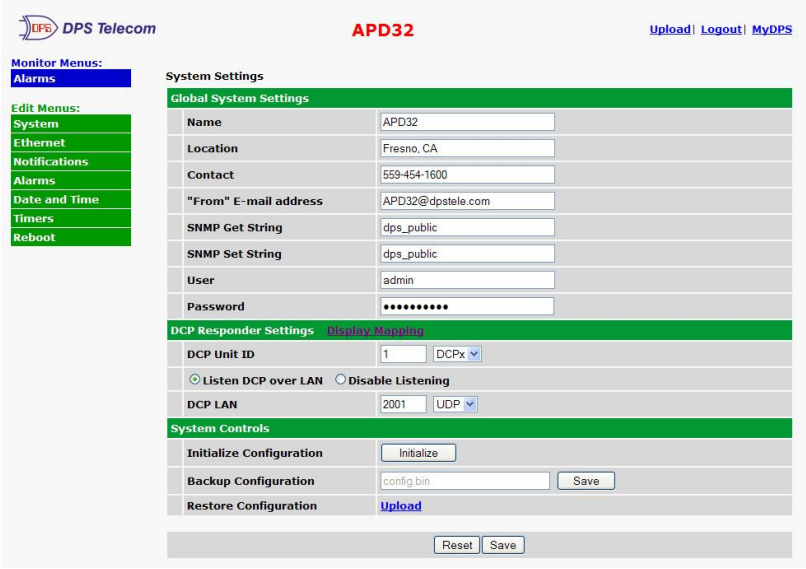


Fig. 10.3

2. Click on the **Notifications** button in the **Edit** menu. You can setup as many as 4 different notifications. Begin the setup "wizard" by clicking on a notification number. In this example, we'll setup Notification 1 to send emails.

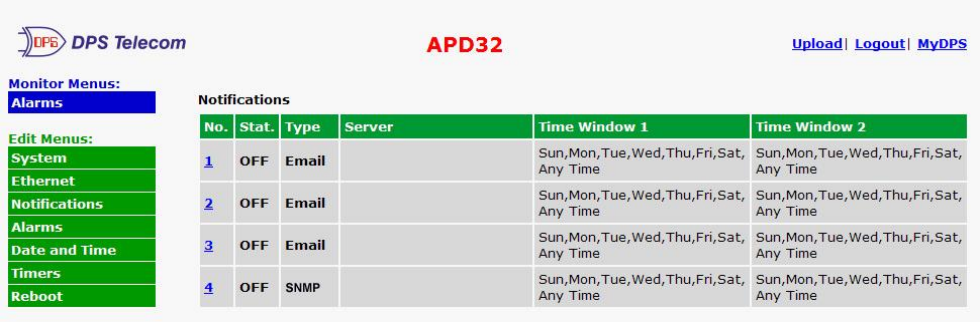


Fig. 10.4

3. At the **Notification Setting** screen, use the drop-down menu to choose whether you want notifications for alarms, clears, or both. Now, select the **Send Email** button and click Next.

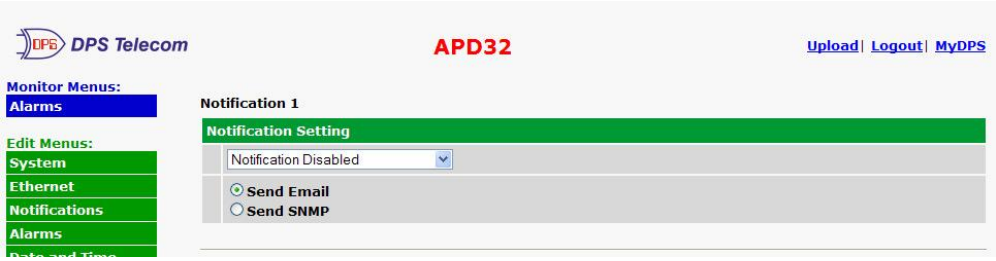


Fig. 10.5

4. At the **Email Notification** screen, you'll enter your email server settings. Enter the **IP address** or **Host Name** of your email server (If using **Host Name,** DNS servers must be configured under the ethernet settings). Enter the **Port Number** (usually 25) and the **"To" Email Address** of the technician that will receive these emails. The "From" E-mail address is set on the "Edit > System" menu, and cannot be modified from this menu. Click **Next**.

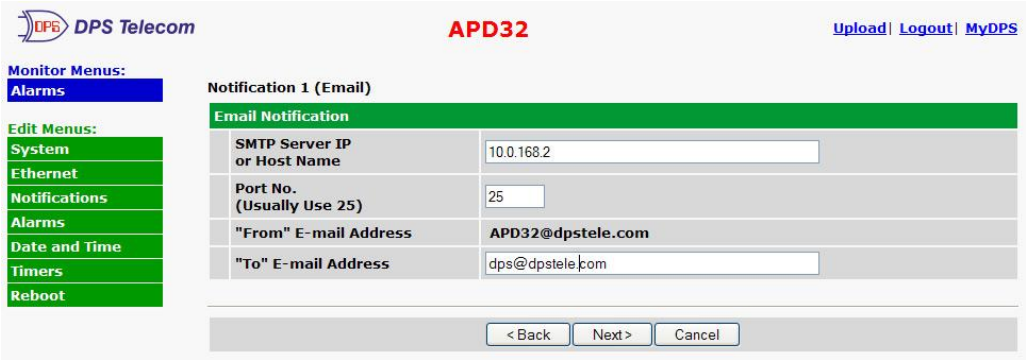


Fig. 10.6

5. At the **Schedule** screen, you'll select the exact days and times you want to receive email notifications. You can set two schedules per notification. For example, you may want to receive notifications at certain times during the week, and at different hours on the weekend. Use the check boxes to select the days of the week, and select the time from the drop down menus. Click **Finish.** To try a test notification, click the **Test** button (See next step.)

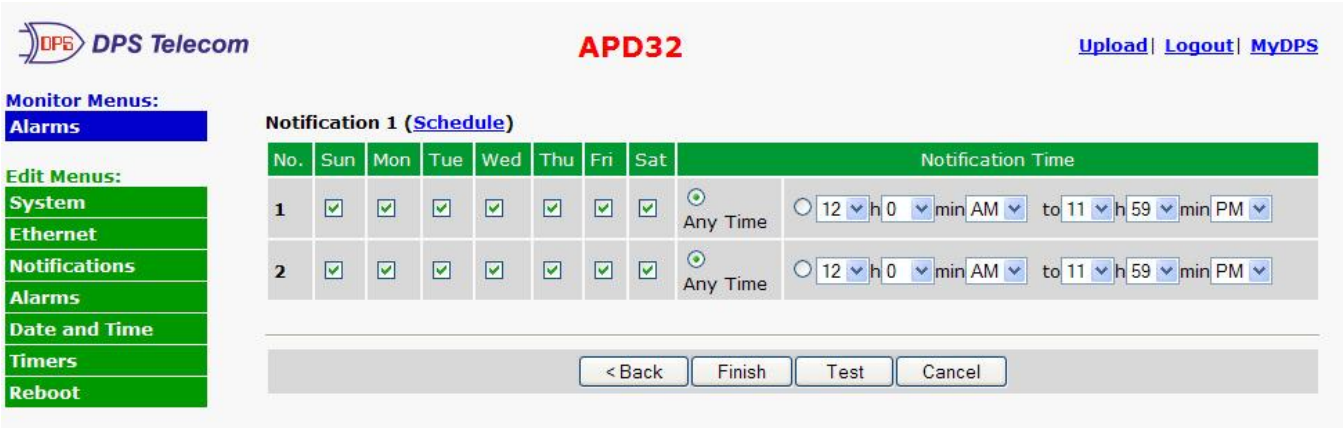


Fig. 10.7

6. If you chose to test the email notification you've just setup, you will see a popup. Click **OK** to send a test email alarm notification. Confirm all your settings by checking your email to see if you've received it.

NOTE: This test only means that your notification settings are correct, but you still need to assign the notification to an alarm point. See the next step.

Fig. 10.8

7. Now you will associate this notification to an alarm (system, base, sensor, etc.) You have 4 notification devices available to use. In the image below, you might assign **Notification Device 1** to **Base Alarm 1**. This means that you would receive an email notification when a "Floor Water" (Alarm Point 1) occurs. Remember that Notification #1 in the Notifications menu corresponds to the first "Notifications" column of check boxes. (Notification #2 is the second column, and so on until Notification #4)

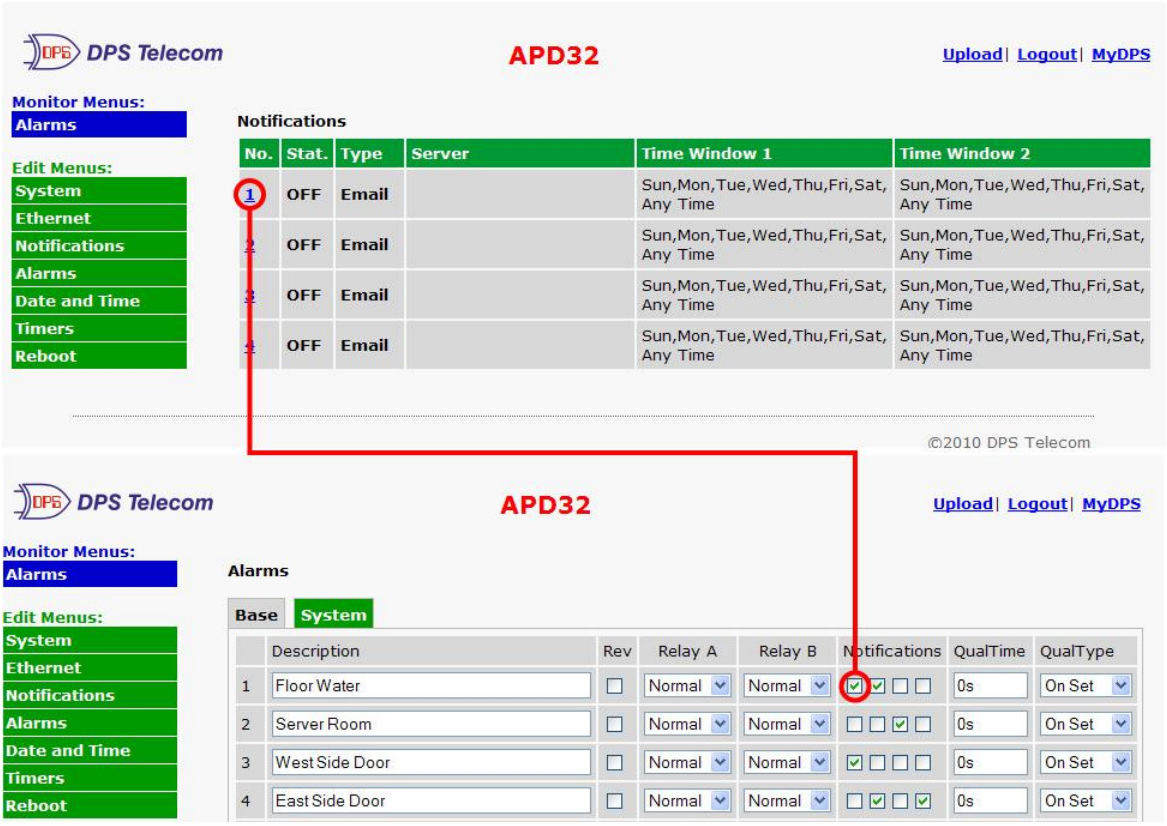


Fig. 10.9 *Associating Alarms to the Notifications Table*

11 Edit Menu Field Descriptions

11.1 System

From the **Edit** > **System** menu, you will configure and edit the global system, T/Mon and control settings for the Alarm Point Duplicator.

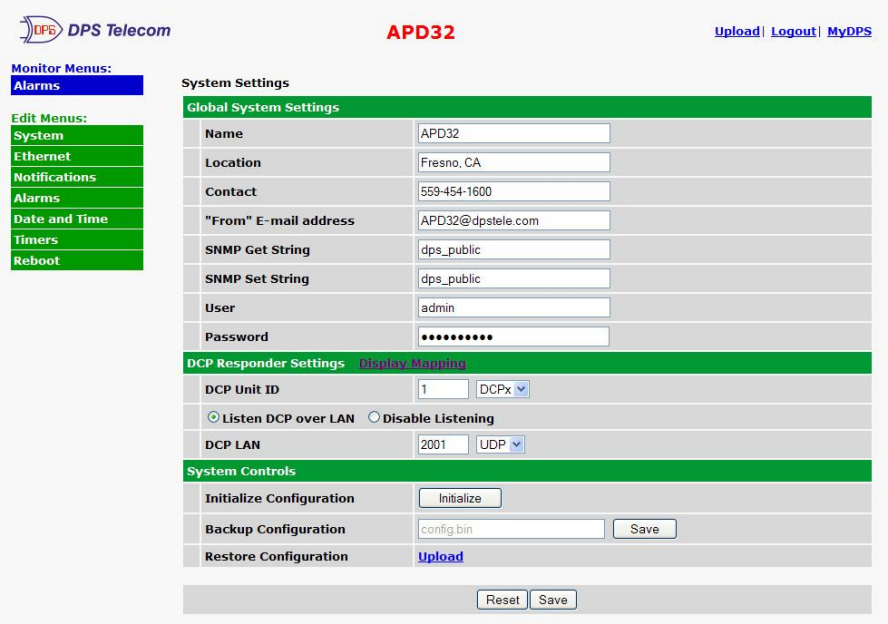


Fig. 11.1 *- The Edit > System menu*

Global System Settings	
Name	A name for this Alarm Point Duplicator. (Optional field)
Location	The location of this Alarm Point Duplicator. (Optional field)
Contact	Contact telephone number for the person responsible for this Alarm Point Duplicator. (Optional field)
"From" Email Address	A valid email address used by the Alarm Point Duplicator for sending email alarm notifications.
SNMP GET String	Community name for SNMP requests. (case-sensitive).
SNMP SET String	Community name for SNMP SET requests. (case-sensitive).
User	Used to change the username for logging into the unit.
Password	Used to change the password for logging into the unit (case-sensitive).
DCP Responder Settings *(For use with T/Mon Master Station)*	
Disable DCP, DCP over LAN	Select one of these three options to send DCP protocol over LAN, serial, or disable DCP completely.
DCP Unit ID	User-definable ID number for this Alarm Point Duplicator (DCP Address).
Listen DCP	Choose to listen DCP over LAN. May also be disabled.
DCP LAN	Enter the DCP port for this Alarm Point Duplicator (UDP/TCP port).
System Controls	
Initialize Configuration	Used to restore all factory default settings to the Alarm Point Duplicator. Do not initialize the non-volatile RAM (NVRAM) unless you want to re-enter all of your configuration settings again.
Backup Configuration	⚠ Save the Alarm Point Duplicator's configuration as a .BIN file to your local PC.
Restore Configuration	Click the "Upload" link and select a .BIN configuration file that you saved previously to your local PC. This will restore the saved configuration.

⚠ **Best Practice**: Always make a copy of your APD configurations

11.2 Ethernet

The **Edit** > **Ethernet** menu allows you to define and configure Ethernet settings.

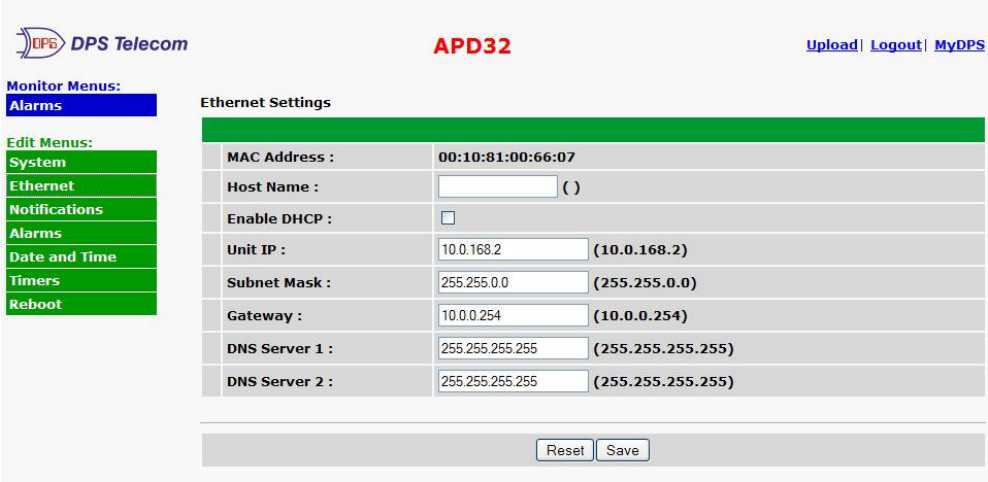


Fig. 11.2 *- The Edit > Ethernet menu*

Ethernet Settings	
MAC Address	Hardware address of the Alarm Point Duplicator. (Not editable - For reference only.)
Host Name	Used only for local web browsing. Example: If you don't want to remember this Alarm Point Duplicator's IP address, you can type in a name is this field, such as Alarm Point Duplicator. Once you save and reboot the unit, you can now browse to it locally by simply typing in "Alarm Point Duplicator" 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 Alarm Point Duplicator.
Subnet Mask	A road sign to the Alarm Point Duplicator, telling it whether your packets should stay on your local network or be forwarded somewhere else on a wide-area network.
Gateway	An important parameter if you are connected to a wide-area network. It tells the Alarm Point Duplicator 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.
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.

11.3 Notifications

From the initial **Edit** > **Notifications** menu, you may configure any of eight different notifications for your Alarm Point Duplicator's alarms. Click on the number of the notification in the far left column under **No.** to begin configuring notifications.

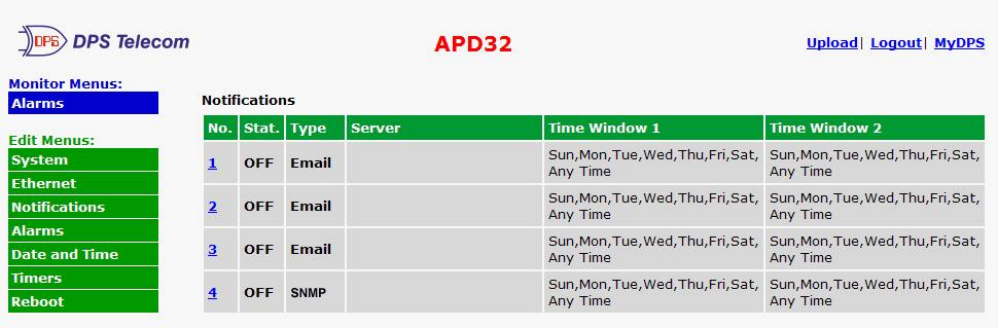


Fig. 11.3 *- The Edit > Notifications menu*

After clicking on a notification, you will tell the Alarm Point Duplicator for what sorts of events you'd like to see notifications and what sort of notification to send.

1. In the drop-down box, choose whether you'd like to receive notification for alarms, clears, or both. You may also disable the notification by selecting the appropriate option.
2. Next, choose the sort of notification you would like sent when an event occurs. You may choose:
   - **Send Email** to have an email sent when events occur
   - **Send SNMP** to have a trap sent when events occur
3. Click **Next >** to continue configuring notifications.

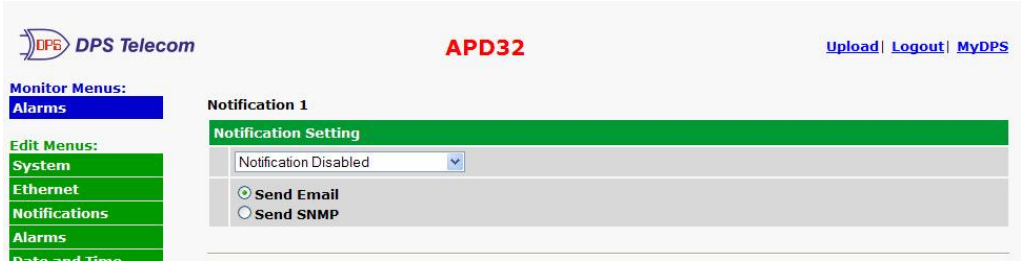


Fig. 11.4 *- The Notification Setting menu*

11.3.1 Notification Settings

Email Notification Fields

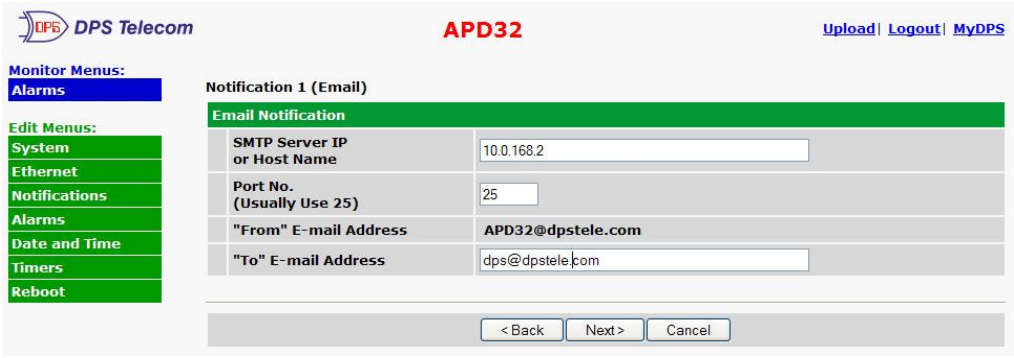


Fig. 11.5 *- Editing Email Notification Settings*

4a. Enter the appropriate information for email notifications in the fields of the Email Notification screen. Click **Next >** to continue.

Email Notification	
SMTP Server IP or Host Name	The IP address of your email server.
Port Number	The port used by your email server to receive emails, usually set to 25.
"From" E-mail Address	Displays the email address (defined in the Edit menu > System) that the Alarm Point Duplicator will send email from. Not editable from this screen.
"To" E-mail Address	The email address of the person responsible for this Alarm Point Duplicator, who will receive email alarm notifications.

SNMP Notification Fields

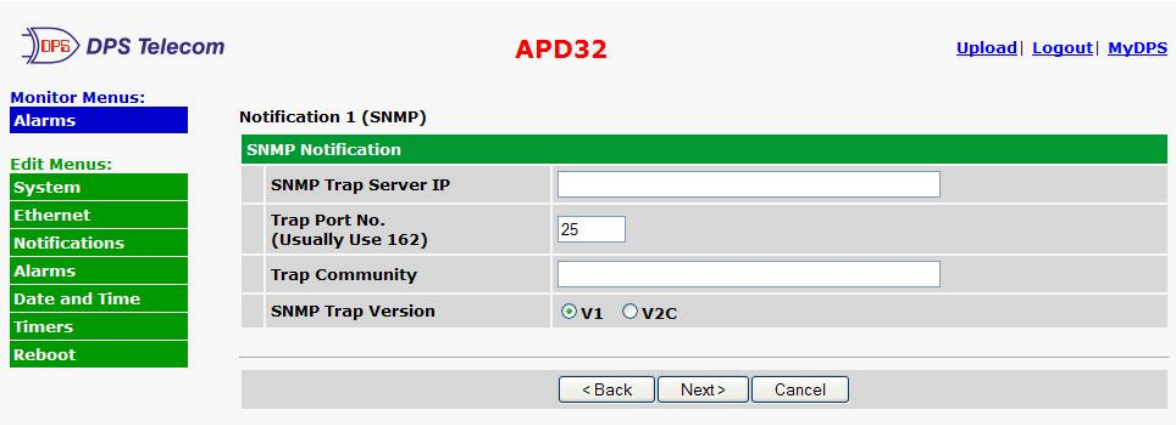


Fig. 11.6 *- Editing SNMP notification settings*

4b. Enter the appropriate information for SNMP Trap notifications in the fields of the SNMP Notification screen. Click **Next >** to continue.

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 receive traps, usually set to 162.
Trap Community	Community name for SNMP TRAP requests.

11.3.2 Schedule

5. Set a schedule for when you'd like the Alarm Point Duplicator to send the notification configured in the previous steps. All schedule settings default to full-time notification, 24 hours a day, 7 days a week.

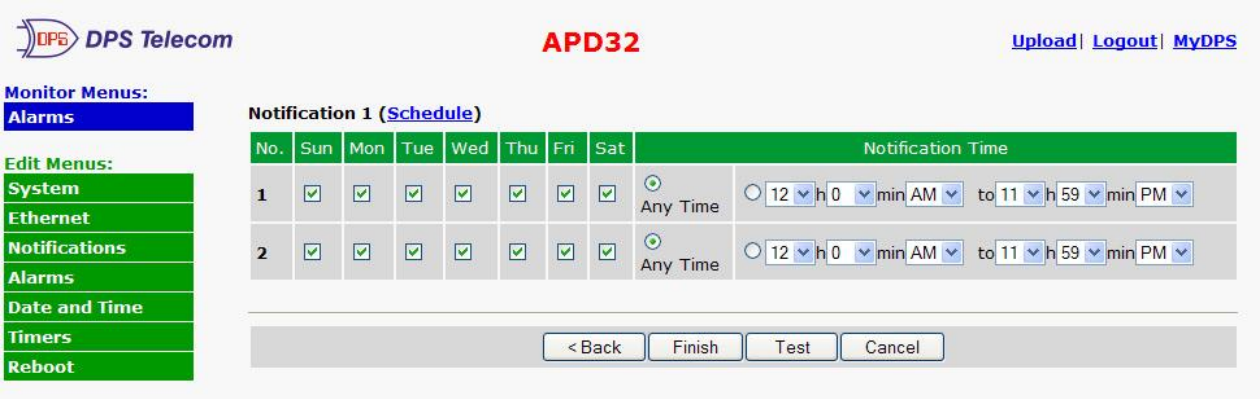


Fig. 11.7 *- The Schedule creation screen*

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 Alarm Point Duplicator 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.

When finished, click **Test** to test the notification or **Finish** to save the notification.

11.4 System Alarms

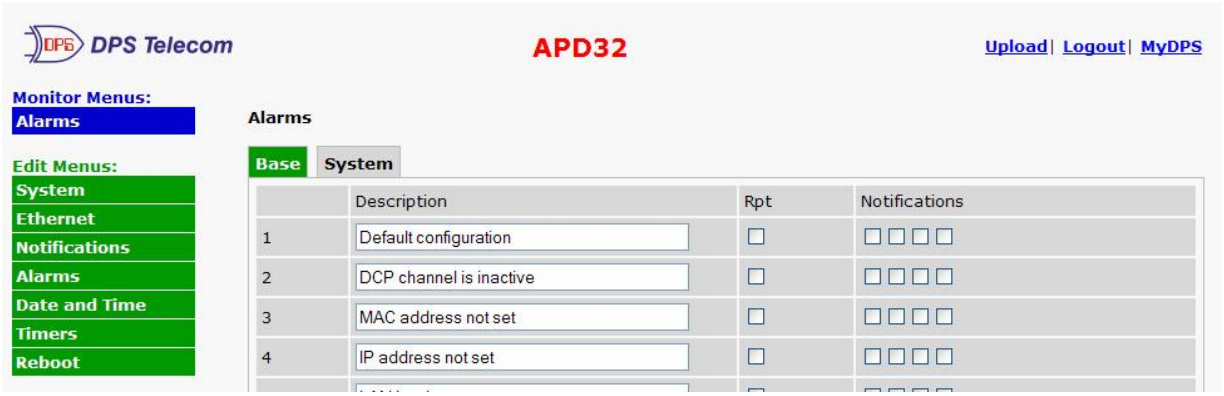


Fig. 11.8 *- The Edit > System Alarms menu*

Choose the "System" tab on the "Edit > Alarms" menu to via the system alarms. These are "software" alarms that are internally generated by the Alarm Point Duplicator to report various events and problems (ex. "Unit has reset" or "NTP server connection has failed").

Editing System Alarms	
(first column)	Alarm point number
Description	Non-editable description for this System (housekeeping) Alarm.
Rpt (Report)	Check this box to choose to report this alarm.Check the box in the green bar (top) to have all System Alarms reported. Leave unchecked to ignore.
Notification devices	Check which notification device(s), 1 through 4, 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.

11.5 Date and Time

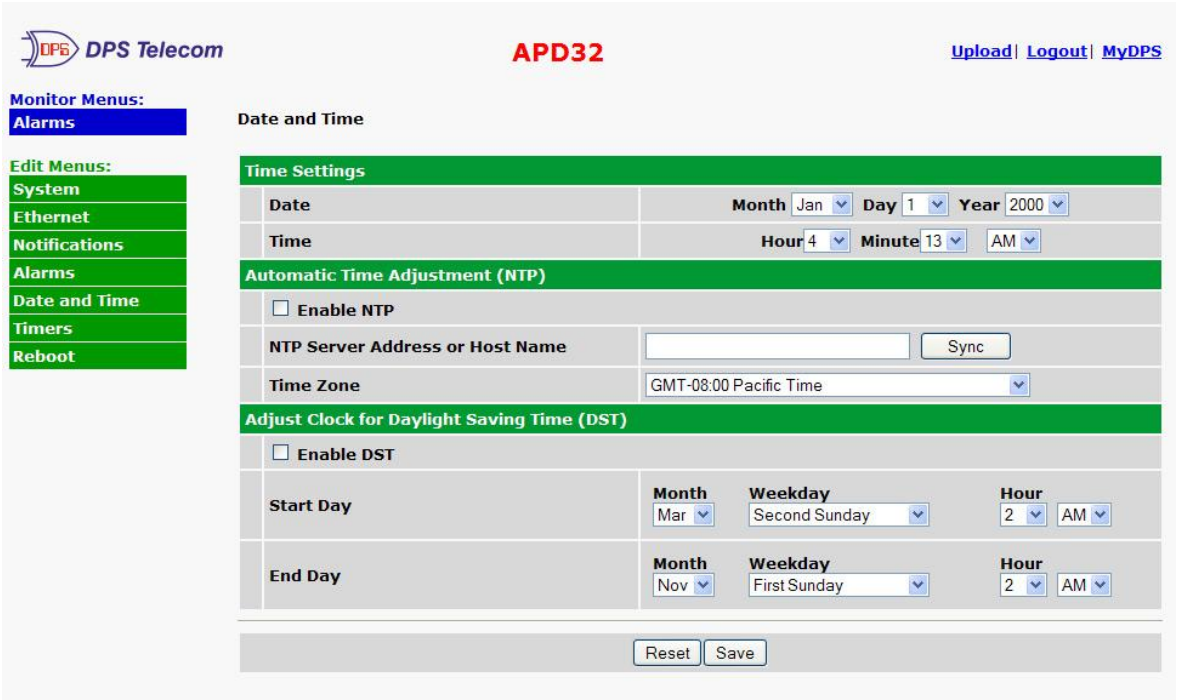


Fig. 11.9 *- The Edit > Date and Time menu*

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
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 Alarm Point Duplicator 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.

11.6 Timers

The Timers Menu allows configuration of various intervals, such as delays between pings, audible alarm tone length, and web refresh delay. Each timer is fully explained within the Timers Menu, as shown below:

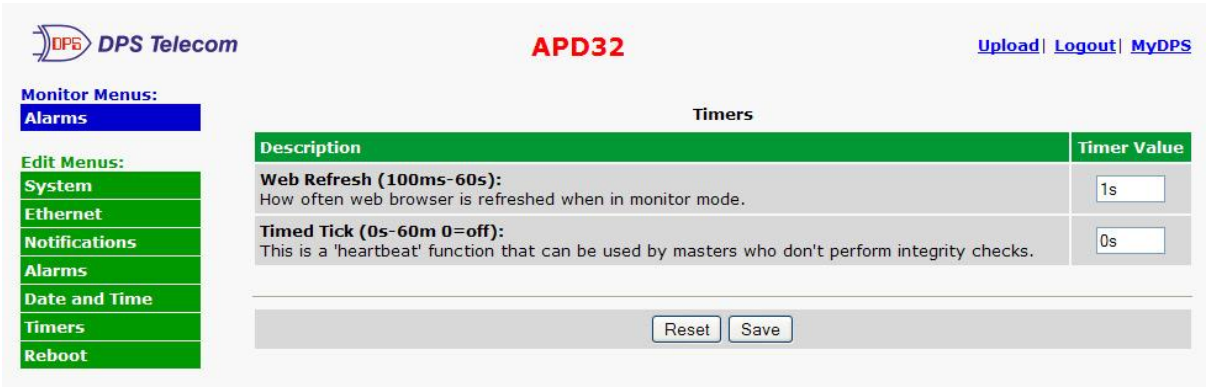


***Fig. 11.10**- The Edit > Timers menu*

11.7 Reboot

Click on the **Reboot** link from the **Edit** menu will reboot the Alarm Point Duplicator after writing all changes to NVRAM.

***Fig. 11.11**- The Edit > Reboot confirmation popup*

11.8 Monitoring via the Web Browser

11.8.1 Monitoring System Alarms

System alarms are non-editable, housekeeping alarms that are programmed into Alarm Point Duplicator. The "System" tab of the **Monitor** > **Alarms** screen provides the status of the system alarms by indicating if an alarm has been triggered. Under the **State** column, the status will appear in red if an alarm has been activated, or green if it has not been activated. The status will be displayed in green when the alarm condition is not present.

See "Display Mapping" in the Reference Section for a complete description of system alarms.

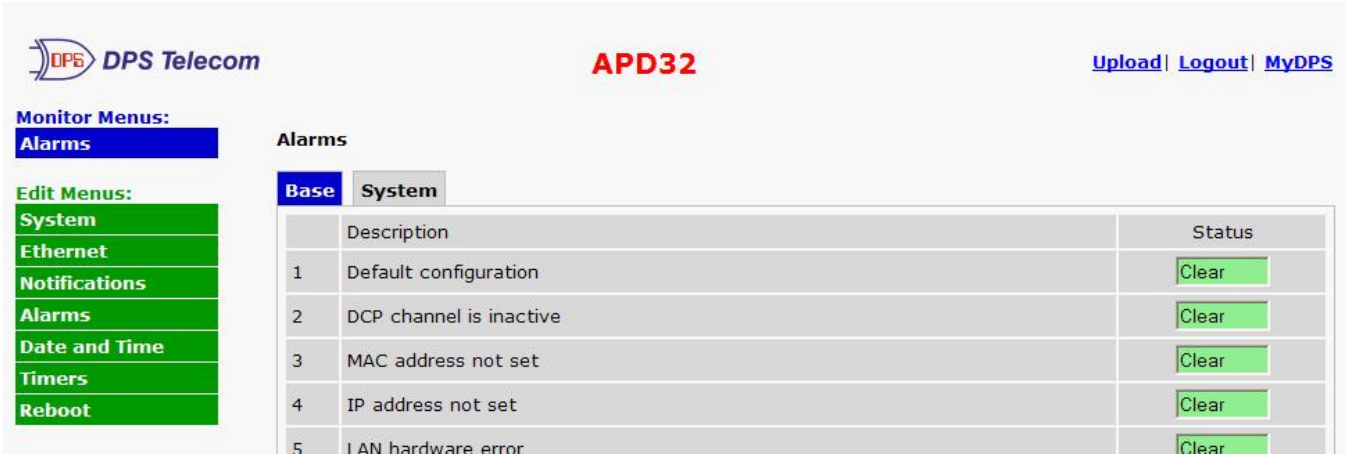


Fig. 11.12 *View the status of System Alarms from the Monitor > Alarms menu.*

12 Firmware Upgrade

Before upgrading the firmware, DPS Telecom suggests that you go to **System Settings >> Backup Configuration** and save your configuration settings. To access the **Firmware Load** screen, click on the upload link at the top right of the browser.

To be notified every time a new firmware is released for your device, login to your My DPS account and navigate to the **Notifications** page. At this page check the box that corresponds to the device that you want firmware notifications for.

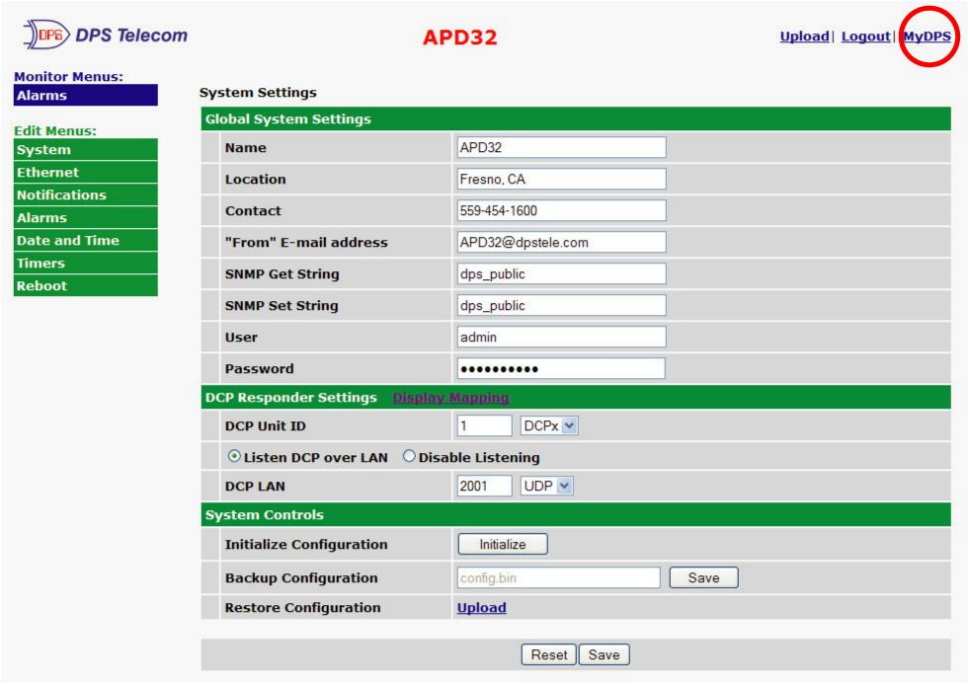


Fig. 12.1 *The clickable link to upgrade firmware from the Edit > System menu*

At the **Firmware Load** screen, simply browse for the firmware update you've downloaded from www.dpstele.com and click **Load**.

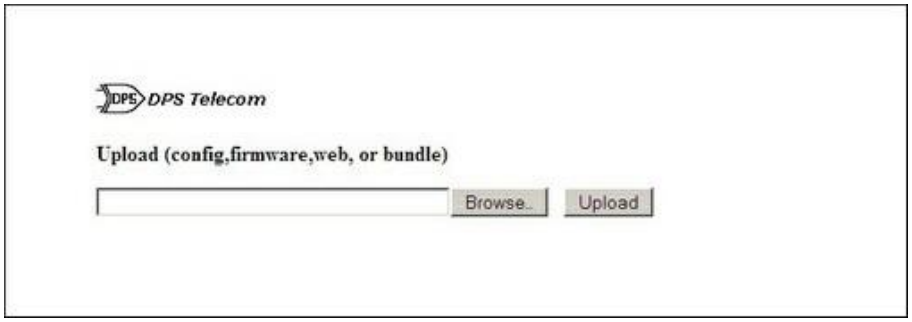


Fig. 12.2 *Browse for downloaded firmware upgrade*

13 Reference Section

13.1 Front and Back Panel LEDs

Fig. 13.1 *Front panel LEDs*

LED	Status	Description
Config	Solid Red	Unit has been configured and requires reboot
Status	Flashing Green	APD application running
	Flashing Red	Boot Loader is running
Link	Solid Green	LAN connected
	Solid Red	LAN not detected
Alarms In	Solid Red	Alarm is present
Craft	Flashing Green	APD data transmit over craft port
	Flashing Red	APD data receive over craft port

Table 13.1 *Front Panel LED Descriptions*

Fig. 13.2 *Back panel LEDs*

LED	Status	Description
A	Solid Green	Power supply A OK
	Off	No voltage, low voltage or incorrect polarity on Power supply A
B	Solid Green	Power supply B OK
	Off	No voltage, low voltage or incorrect polarity on Power supply B
FA	Solid Red	Blown Fuse
LNK	Solid Green	LAN connected
LAN	Flashing Yellow	LAN Activity

Table 13.2 *Back Panel LED Descriptions*

13.2 Display Mapping

	Description	Port	Address	Point
Display 1	Discrete Alarms 1-32	99	1	1-32
	Default configuration	99	1	33
	MAC address not set	99	1	35
	IP address not set	99	1	36
	LAN hardw are error	99	1	37
	SNMP processing error	99	1	38
	SNMP community error	99	1	39
	LAN TX packet drop	99	1	40
	Notification 1 failed	99	1	41
	Notification 2 failed	99	1	42
	Notification 3 failed	99	1	43
	Notification 4 failed	99	1	44
	NTP failed	99	1	49
	Timed Tick	99	1	50
	Dynamic memory full	99	1	52
	Unit Reset	99	1	53
Display 2	Controls 1A - 16A	99	1	1-16
	Controls 1B - 16B	99	1	17-32
	Controls 17A - 32A	99	1	33-48
	Controls 17B - 32B	99	1	49-64

Table 13.1 *Display Mapping*

13.3 SNMP Manager Functions

The SNMP Manager allows the user to view alarm status, set date/time, issue controls, and perform a resync. The display and tables below outline the MIB object identifiers. Table 13.3 begins with dpsRTU; however, the MIB object identifier tree has several levels above it. The full English name is as follows: root.iso.org.dod.internet.private.enterprises.dps-Inc.dpsAlarmControl.dpsRTU. Therefore, dpsRTU's full object identifier is 1.3.6.1.4.1.2682.1.4. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.4.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.4 + the Control Grid (.3) + the Display (.3).

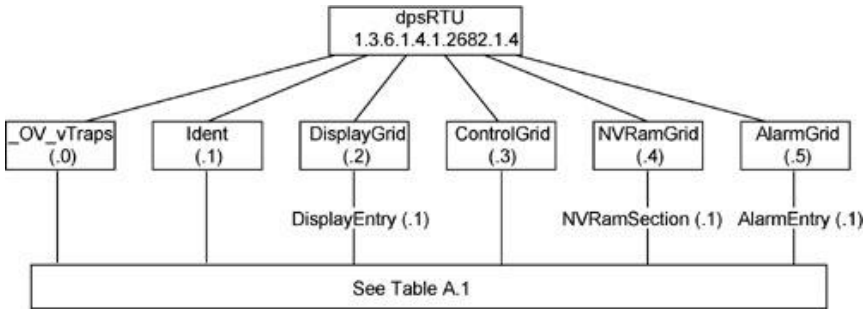


Table 13.3

Tbl. B1 (O.)_OV_Traps points	Tbl. B2 (.1) Identity points	Tbl. B3 (.2) DisplayGrid points
_OV_vTraps (1.3.6.1.4.1.2682.1.4.0)	**Ident (1.3.6.1.4.1.2682.1.4.1)**	**DisplayEntry (1.3.6.1.4.1.2682.1.4.2.1)**
PointSet (.20)	Manufacturer (.1)	Port (.1)
PointClr (.21)	Model (.2)	Address (.2)
SumPSet (.101)	Firmware Version (.3)	Display (.3)
SumPClr (.102)	DateTime (.4)	DispDesc (.4)*
ComFailed (.103)	ResyncReq (.5)*	PntMap (.5)*

ComRestored (.014)
P0001Set (.10001) through P0064Set (.10064)
P0001Clr (.20001) through P0064Clr (.20064)

* Must be set to "1" to perform the resync request which will resend TRAPs for any standing alarm.

Tbl. B3 (.3) ControlGrid points
ControlGrid (1.3.6.1.4.1.2682.1.4.3)
Port (.1)
Address (.2)
Display (.3)
Point (.4)
Action (.5)

Tbl. B5 (.5) AlarmEntry points
AlarmEntry (1.3.6.4.1.2682.1.4.5.1)
Aport (.1)
AAddress (.2)
ADisplay (.3)
APoint (.4)
APntDesc (.5)*
AState (.6)
* For specific alarm points, see Table B6

Table 13.4

The Alarm Point Duplicator has changed from 1.3.6.1.4.1.2682.1.2 to 1.3.6.1.4.1.2682.1.4 Updated MIB files are available on the Resource CD or upon request.

13.4 SNMP Granular Trap Packets

Tables 13.5 and 13.6 provide a list of the information contained in the SNMP Trap packets sent by the Alarm Point Duplicator

SNMP Trap managers can use one of two methods to get alarm information:

1. Granular traps (not necessary to define point descriptions for the Alarm Point Duplicator) **OR**
2. The SNMP manager reads the description from the Trap.

UDP Header	Description
1238	Source port
162	Destination port
303	Length
0xBAB0	Checksum

Table 13.5 *UDP Headers and descriptions*

SNMP Header	Description
0	Version
Public	Request
Trap	Request
1.3.6.1.4.1.2682.1.4	Enterprise
126.10.230.181	Agent address
Enterprise Specific	Generic Trap
8001	Specific Trap
617077	Time stamp
1.3.7.1.2.1.1.1.0	Object
NetGuardian v1.0K	Value
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.4.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.4.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.4.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.4.5.1.6.99.1.1.1	Object
Alarm	Value

Table 13.6 *SNMP Headers and descriptions*

14 Frequently Asked Questions

Here are answers to some common questions from Alarm Point Duplicator users. The latest FAQs can be found on the Alarm Point Duplicator support web page, **http://www.dpstele.com.**

If you have a question about the Alarm Point Duplicator, 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 Alarm Point Duplicator?

A. You must use **Port 2002** to connect to the Alarm Point Duplicator. 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 Alarm Point Duplicator and Port 2002. For example, to connect to the Alarm Point Duplicator using the standard Windows Telnet client, click Start, click Run, and type "telnet <Alarm Point Duplicator IP address> 2002."

Q. How do I connect my Alarm Point Duplicator to the LAN?

A. To connect your Alarm Point Duplicator 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 Alarm Point Duplicator 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 Alarm Point Duplicator.

Q. The LAN link LED is green on my Alarm Point Duplicator, 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 Alarm Point Duplicator. Ordering TTL points for your Alarm Point Duplicator 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 Alarm Point Duplicator 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 Alarm Point Duplicator 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 do 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 -36 and -72VDC.

14.2 SNMP FAQs

Q. Which version of SNMP is supported by the SNMP agent on the Alarm Point Duplicator?

A. SNMP v1 and SNMPv2c.

Q. How do I configure the Alarm Point Duplicator to send traps to an SNMP manager? Is there a separate MIB for the Alarm Point Duplicator? 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 Alarm Point Duplicator begins sending traps as soon as the SNMP managers are defined. The Alarm Point Duplicator MIB is included on the Alarm Point Duplicator 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 Alarm Point Duplicator support MIB-2 and/or any other standard MIBs?

A. The Alarm Point Duplicator supports the bulk of MIB-2.

Q. Does the Alarm Point Duplicator SNMP agent support both Alarm Point Duplicator and T/MonXM variables?

A. The Alarm Point Duplicator SNMP agent manages an embedded MIB that supports only the Alarm Point Duplicator'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 Alarm Point Duplicator 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 Alarm Point Duplicator 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 Alarm Point Duplicator and the SNMP manager are both on the network. Use the unit's ping command to ping the SNMP manager.

15 Technical Support

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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.
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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.*

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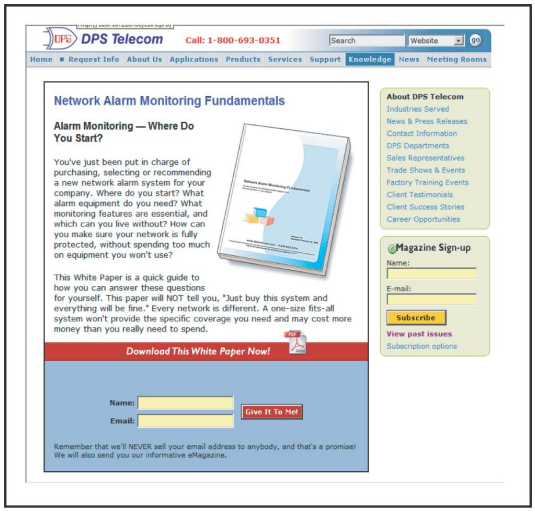

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