

NetGuardian 16A

USER MANUAL



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Revision History

May 4, 2017	Added Exp1 alarms and controls
October 24, 2016	Updates to Alarm Points
February 12, 2016	Updates to Modbus Registers
January 21, 2016	Modbus Registers added
October 30, 2015	Added BAU Global and Alarms sections
May 20, 2015	Updates to Prov Analogs and Sensors
March 9, 2015	Minor Update
January 14, 2015	Updated Web Interface Screenshots
September 28, 2014	Add note about analog label
November 11, 2011	Initial release
March 1, 2012	Added analog section
March 9, 2012	Updated shipping list
March 13, 2012	Updated display mapping
March 16, 2012	Added Push-to-Talk Feature
March 26, 2012	Added gauge view information to user analog sections
July 17, 2012	Added information about externally powered build option
February 26, 2013	Manual formatting modifications
May 7, 2013	Added new information about various hardware changes and extensive web interface overhaul
May 31, 2013	Added support for Railroad Track Monitor

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1 NetGuardian Overview



As an easy-to-install, high-density RTU, the NetGuardian 16A effectively monitors sites with a lot of discrete alarm points.

Effective, easy-to-install, light-capacity alarm monitoring

The NetGuardian 16A is a compact, LAN-based, high-density remote telemetry unit. The NetGuardian is designed for easy installation at remote sites with up to 20 discrete alarm points, making it cost-effective to deploy alarm monitoring at your medium sized facilities.

Powerful monitoring for high-density sites

This NetGuardian is based on the time-tested NetGuardian 832A design. This telco-grade remote is housed in a durable aluminum case. This SNMP remote is scaled to the needs of medium-density sites that require a number of discrete inputs.

- **16 Analog Inputs** (Note: Analog Channel Polarity does not match label on units shipped prior to 09/27/14)
- **20 Discrete Alarm Inputs and 4 Control Relays or 16 Discrete Alarm Inputs and 8 Control Relays**
- **16 Ping Targets**
- **1 Reach-through serial port (build option)**

Reach-through serial port gives LAN access to on-site equipment

The unit also features a reach-through serial port. This port provides remote users with LAN-based Telnet access to a variety of on-site telecom equipment, including switches, radios, PBXs and many other devices.

SNMP or T/Mon

This NetGuardian can report alarms to any SNMP manager or to the DPS Telecom T/Mon Remote Alarm Monitoring System. The unit can also report via SNMP and DCPx concurrently to the T/Mon.

Easy Alerts via Email or SNMP

Email notification reports alarm events to the e-mail addresses of specified personnel and creates a supplemental record of alarm events in addition to your master via SNMP traps.

Paging Notification Support

The optional paging functionality includes a 33.6K internal modem that provides full support for alphanumeric paging, so you can automatically send detailed notifications and instructions to alphanumeric pagers, cell phones, and PDAs.

Upgraded Web Interface

The overhauled web interface that boasts several time-saving new tools, including new analog gauges. You'll also notice the impressive speed boost. Menus load very quickly, and the alarm status updates automatically without requiring a page refresh.

2 Specifications

Discrete Alarm Inputs:	20 (Optional) 16
Temperature Sensors:	Support for up to 32 D-Wire Sensors (see below)
Sensor Thresholds:	4 per sensor
D-wire Sensors:	Up to 32 sensors
Multi-purpose User Analogs:	16 (Optional) 2 for monitoring power input
Analog Input Range:	-90 to +90 VDC (or 4-20mA)
Analog Accuracy:	+/- 1% of Analog Range (See Analog Step Sizes)
Analog Thresholds:	4 per analog channel
Control Relays:	4 (Optional) 8
Ping Targets:	16
Protocols:	SNMP (v1, v2c, and v3), DCPx, TELNET, HTTP, SMTP, ICMP, HTTPS
Dimensions:	1.72" H x 17.026" W x 6.636" D (4.4 cm x 43.25 cm x 16.85 cm)
Weight:	4 lbs. 3oz. (1.9 kg)
Mounting:	19" or 23" rack mount
Power Input	
Voltage Options Include:	-48VDC (-36 to -72 VDC) (Optional) +24 VDC (18 V to 36 VDC) (Optional) -24VDC (-18 to -36 VDC)
Current Draw:	250mA for -48VDC
GMT Fuse:	Resettable Fuse (Internal), if +24V Power Input -48V or -24V Power Input uses 3/4 Amp GMT Fuse
(Optional) Sensor Power Output	
Voltage Output:	+12 VDC
Output Current:	Up to 750 mA at +12 VDC
GMT Fuse:	3/4 Amp recommended
Interfaces:	1 RJ45 10/100BaseT full-duplex Ethernet port 1 USB front-panel craft port 1 Push button switch 1 RJ11 for DPS sensor network (D-Wire) 2x8 analog connectors Wireless antenna (Optional) Serial port options: RS232, RS485, 202, or 33.6k
Visual Interface:	7 Front Panel LEDs 6 Back Panel LEDs
Audible Notification:	(Optional) Alarm speaker with volume control
Operating Temperature:	32°–140° F (0°–60° C)
Operating Humidity:	0%–95% non-condensing
MTBF:	60 years
Windows Compatibility:	Windows 95, 98 NT, ME, XP, 2000, Vista, 7 32/64 bit
RoHS:	5/6

3 Shipping List

Please make sure all of the following items are included with your NetGuardian. 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**.



**NetGuardian 16A
D-PK-NG16A**



**NetGuardian 16A User Manual
D-UM-NG16A**



Resource CD



**USB Cable
D-PR-046-10A-06**



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



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

X 2

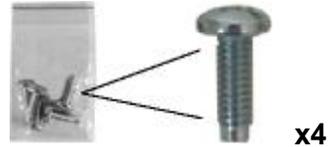


**19" Rack Ears
D-CS-325-10A-00**

X 2



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



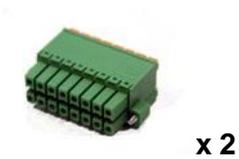
Rack Screws
1-000-12500-06



Alternate Rack Screws
2-820-80750-03



Pads
2-015-00030-00



8-Pin Alarm Connector
2-821-20835-00



Lg. Locking Power Connectors
2-820-35102-00



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

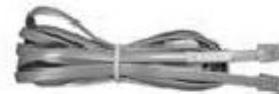
3.1 Optional Shipping Items - Available by Request



Lg. Pluggable Power Connectors(Replaces Lg. Locking Power Connectors)
2-820-00862-02



+24V Wall Transformer
D-PR-105-10A-02
(110VAC to +24VDC converter)



Telephone Cable 6ft
D-PR-045-10A-01
(For Optional Modem Build Only)



x 1 (202 Option only)

4-Pin Serial Connector
2-820-00814-02



x 1 (Sensor Power Only)

Sensor Power Connector
2-821-10435-00



x 1 (Wireless Option Only)

Wireless Antenna
2-901-00802-00



Track Monitor
D-PK-TRKMN-12001

4 Installation

4.1 Tools Needed

To install the NetGuardian, 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

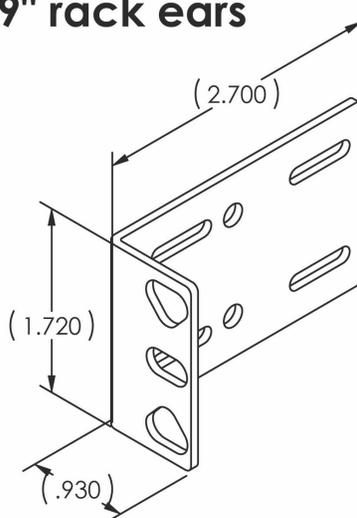


The NetGuardian can be flush or rear-mounted

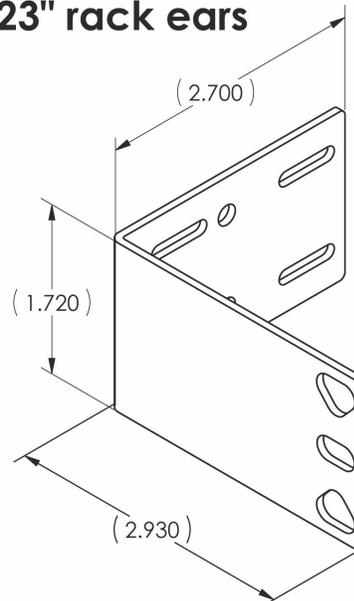
The compact NetGuardian occupies only one standard rack unit. The NetGuardian mounts in a 19" or 23" rack, and can be mounted on the right or left, in the flush-mount or rear mount locations, as shown in the above diagram.

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

19" rack ears



23" rack ears



5 NetGuardian Back Panel

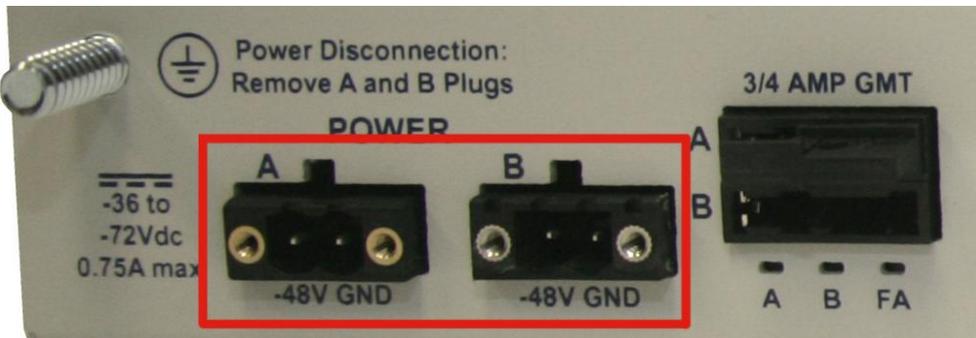


NetGuardian back panel connections

(Note: Analog Channel Polarity does not match label on units shipped prior to 09/27/14)

5.1 Power Connection

The NetGuardian is powered by two screw terminal barrier plug power connectors.



Screw terminal barrier plugs

Note: 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 unit, before making your power connections.

To connect the unit to a power supply:

1. Use the grounding lug next to the  symbol to connect the unit to earth ground.
2. 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.
4. Insert a battery lead to the plug's left terminal and tighten its screw.
5. Insert fuse into the fuse distribution panel.
6. Check the power status LED for polarity.
7. Measure the voltage by connecting the black cable onto the ground connector of your DVM and the red cable onto the other connector of your DVM.
8. If the voltage does not read between the range displayed below the grounding lug, stop immediately.

Note: The voltage range will depend on build and power input source. If you experience any issues with powering your unit, contact DPS Telecom technical support at 559-454-1600 or support@dpstele.com

9. Insert the local fuse into the power fuse slot. The power plug can be inserted into the power connector only one way to ensure the correct polarity.

Note: The negative voltage terminal is on the left and the GND terminal is on the right.

10. Verify that the  LED is lit. To confirm that power is correctly connected, the front panel status LED will flash RED and GREEN, indicating that the firmware is booting up.

An optional version of the unit is powered by a screw-on plug, as seen in the image below.



Close-up view of the screw-on power connector

To connect the unit's power supply with a screw on plug, follow these steps:

1. Plug in the power connector to the rear panel of the device.
2. Twist the collar of the plug to lock in place.
3. Plug in the wall transformer to a power outlet.

5.2 LAN Connection

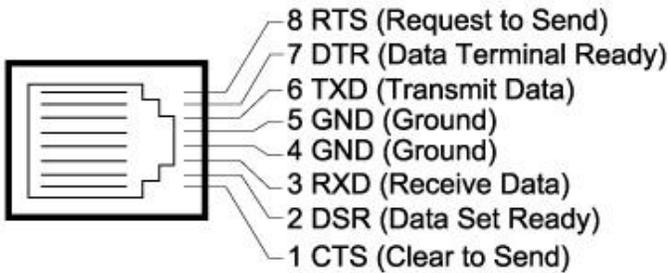
To connect the NetGuardian to the LAN, insert a standard RJ45 Ethernet cable into the 10/100BaseT Ethernet port on the back of the unit. If the LAN connection is OK, the LNK LED will light **SOLID GREEN**.

5.3 Serial Connection

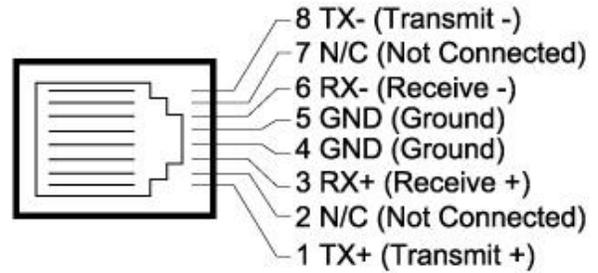
The NetGuardian has 5 build options for its serial / dialup port. You can order your port as a **Yost RS-232, RS-485, 4-wire 202 RJ45/4-pin connection**, with a **dial-up modem**, or 900Mhz wireless interface. The serial port is located on the back panel, where it is labeled "Primary."

Serial port build options

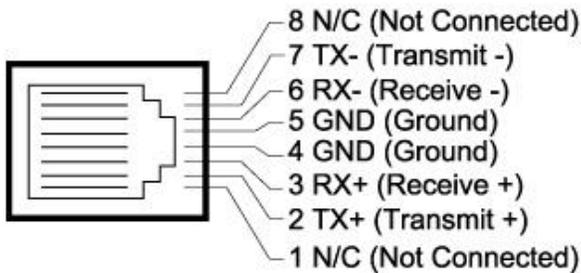
Yost RS-232 RJ45 Connector



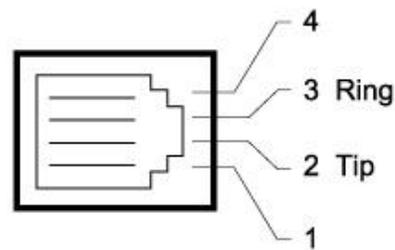
RS-485 RJ45 Connector



4-Wire 202 Connector



RJ-11 Phone Line Connector



Hot Tip!

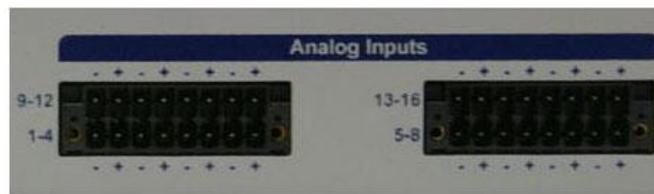
If you are unsure of the serial port type on your NetGuardian, login to MyDPS and click on the Product Information Search link. Type in the full part number of your unit and click the Submit button to access the specifications.

The serial port can be used for three different functions:

- Reach-through proxy connection for LAN-based Telnet access to switches, radios, PBXs and other equipment.
- Alarm reporting to the T/Mon Remote Alarm Monitoring System over an RS-232, 485, 202, or dial-up modem.
- Dial-up notifications via your cell phone and alphanumeric pager.

Note: If the serial port is configured for alarm reporting to T/Mon, the port is **not** available for use as a reach-through proxy port.

5.4 Multi-Purpose Analog Inputs



Analog Connectors

(Note: Analog Channel Polarity does not match label on units shipped prior to 09/27/14)

The NetGuardian's sixteen multi-purpose analog inputs measure continuous ranges of voltage or current. Analog alarms are typically used to monitor battery voltage, charging current, temperature, humidity, wind speed, or other continuously changing conditions. The measurement range of the analog channels is -90 to $+90$ VDC or 4 to 20 mA. To configure the analogs for current sensing (4 - 20mA)

please review the section "Switching Analog Alarms to Current Operation" for info on jumper position.

To connect analog inputs, remove the connector plug, connect the leads to the appropriate terminals and reinsert the barrier plug. Note that the plug can be inserted into its socket only one way, so make sure it can only be reinserted with the alarm inputs aligned correctly.

By default, the analog inputs are configured to measure voltage. You can switch the analog inputs to measure current by resetting jumpers on the NetGuardian's circuit board.

Analog Step Sizes:

Your Analogs are accurate to within +/- 1% of the analog range.

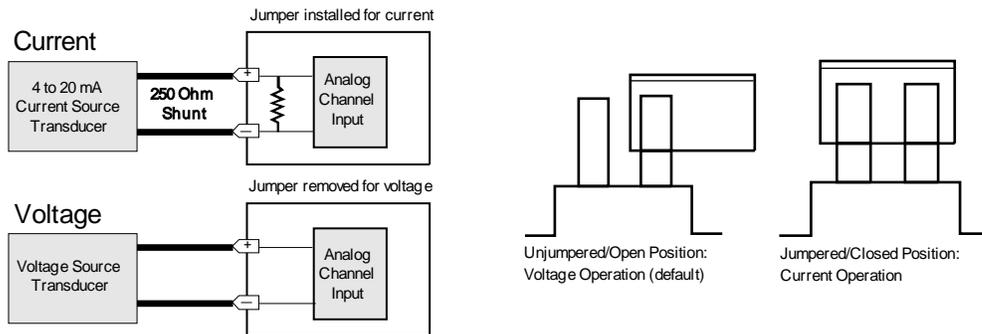
Analog Step Sizes and Accuracy		
Input Voltage Range	Resolution (Step Size)	Accuracy
0-5 V	.0015 V	+/- .05V
5-14 V	.0038 V	+/- .14V
14-30 V	.0081 V	+/- .30V
30-70 V	.0182 V	+/- .70V
70-90 V	.0231 V	+/- .90V

5.4.1 Switching Analog Alarms to Current Operation

Adjustable jumpers on the NetGuardian circuit board

To test the analog alarm voltage/current jumpers, follow these steps:

1. Make sure the NetGuardian is powered down and disconnected from all network connections.
2. Remove the screws from the sides of the NetGuardian case.
3. Slide the top cover of the case off to expose the circuit board.
4. The adjustable jumpers are shown in the above diagram. All alarm inputs can be individually configured for current or voltage operation. Remember that the default jumper position is OPEN for measuring voltage. **Note:** Each jumper inserts a 250-ohm shunt resistor across the input. This must be taken into account when defining the analog input reference scale.



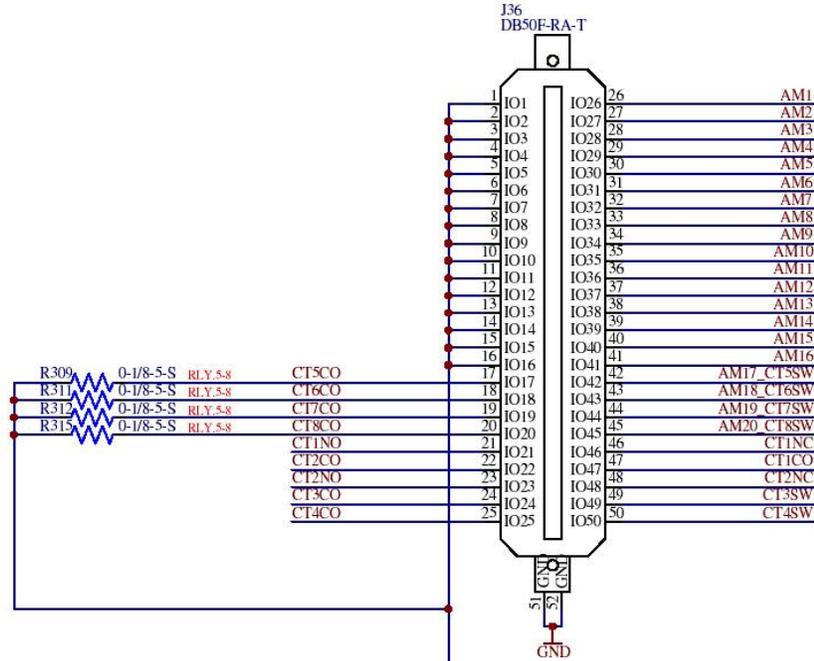
5. Slide the top cover of the case back into position and replace the screws.
6. Reconnect and power up the NetGuardian.

5.5 50-Pin Alarm and Control Relay Connector



Alarm and Relay Connectors

The connectors for discrete alarms and control relays are the two 50-pin connectors on the NetGuardian 16A's back panel.



Pinout of the NetGuardian Amphenol labeled "Discretes 1-20/ Relays 1-4" or "Discretes 1-16/ Relays 1-8"

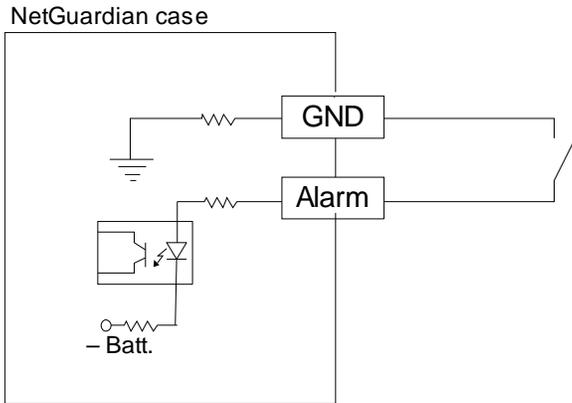
Discretes 1–20 or Discretes 1-16/Control Relays 1-8					
	RTN	ALM		RTN	ALM
ALM 1	1	26	ALM 13	13	38
ALM 2	2	27	ALM 14	14	39
ALM 3	3	28	ALM 15	15	40
ALM 4	4	29	ALM 16	16	41
ALM 5	5	30	*ALM 17 CT5SW	17	42
ALM 6	6	31	*ALM 18 CT6SW	18	43
ALM 7	7	32	*ALM 19 CT7SW	19	44
ALM 8	8	33	*ALM 20 CT8SW	20	45
ALM 9	9	34			
ALM 10	10	35			
ALM 11	11	36			
ALM 12	12	37			

Control Relays 1-4 or 1–8			
	NO	NC	CO
CTRL 1	21	46	47
CTRL 2	23	48	22
CTRL 3	49	49	24
CTRL 4	50	50	25
*CTRL 5	42	42	17
*CTRL 6	43	43	18
*CTRL 7	44	44	19
*CTRL 8	45	45	20

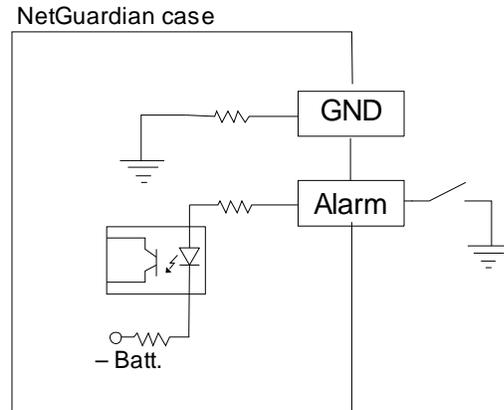
Note: "*" designates a build option for either 16 alarms/8 relays or 20 alarms/4 relays
 Alarm and control relay connector pinout for the NetGuardian 16A

5.6 Discrete Alarms

Dry Contact



Contact to Ground



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

Discrete alarm points can connect as a dry contact or a contact to ground

The NetGuardian features up to 20 (16 optional) 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 NetGuardian'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.

5.6.1 Externally Powered Build Option

With externally powered TTL build option, discrete alarms 1-16 are TTL, each supporting a range of 0-12 VDC. The bias pin can still be used with dry contact closures to provide a 12V wetting voltage for any of the 16 TTL alarms. However, if the bias pin is not used, then an external 0-12 VDC voltage can be applied to the alarm input pin to trigger alarms.

NOTE: When bias pin is not in use, the external voltage must be at a voltage potential relative to the chassis earth ground.

5.7 Optional 66 Block Connector

The 50-pin connector on the back panel of the NetGuardian can be connected to DPS Telecom's optional 66 block connector. For pinout and color-code information, see the diagrams below.

Note: The 66 Block supports termination of 22 - 26 AWG (0.81 - 0.41mm) solid insulated cable or 18-19 AWG (1.02 - 0.91mm) solid stripped cable. DPS recommends using 24 AWG wire (solid).

	Wire color (wire/stripe)	Connection	66 Block Pair #	Corresponding 50-Pin Connector Pin #
	WHT/BLU	ALM 1	1	26
	BLU/WHT	RTN 1		1
	WHT/ORG	ALM 2	2	27
	ORG/WHT	RTN 2		2
	WHT/GRN	ALM 3	3	28
	GRN/WHT	RTN 3		3
	WHT/BRN	ALM 4	4	29
	BRN/WHT	RTN 4		4
	WHT/GRY	ALM 5	5	30
	GRY/WHT	RTN 5		5
	RED/BLU	ALM 6	6	31
	BLU/RED	RTN 6		6
	RED/ORG	ALM 7	7	32
	ORG/RED	RTN 7		7
	RED/GRN	ALM 8	8	33
	GRN/RED	RTN 8		8
	RED/BRN	ALM 9	9	34
	BRN/RED	RTN 9		9
	RED/GRY	ALM 10	10	35
	GRY/RED	RTN 10		10
	BLK/BLU	ALM 11	11	36
	BLU/BLK	RTN 11		11
	BLK/ORG	ALM 12	12	37
	ORG/BLK	RTN 12		12
	BLK/GRN	ALM 13	13	38
	GRN/BLK	RTN 13		13
	BLK/BRN	ALM 14	14	39
	BRN/BLK	RTN 14		14
	BLK/GRY	ALM 15	15	40
	GRY/BLK	RTN 15		15
	YEL/BLU	ALM 16	16	41
	BLU/YEL	RTN 16		16
	YEL/ORG	ALM 17 SW	17	42
	ORG/YEL	RTN 17		17
	YEL/GRN	ALM 18 SW 6	18	43
	GRN/YEL	RTN 18		18
	YEL/BRN	ALM 19 SW 7	19	44
	BRN/YEL	RTN 19		19
	YEL/GRY	ALM 20 SW 8	20	45
	GRY/YEL	RTN 20		20
	VIO/BLU	CT1NC	21	46
	BLU/VIO	CT1NO		21
	VIO/ORG	CT1CO	22	47
	ORG/VIO	CT2CO		22
	VIO/GRN	CT2NC	23	48
	GRN/VIO	CT2NO		23
	VIO/BRN	CT3SW	24	49
	BRN/VIO	CT3CO		24
	VIO/GRY	CT4SW	25	50
	GRY/VIO	CT4CO		25

66 block connections for discretes 1-20

6 NetGuardian Front Panel



NetGuardian 16A front panel

6.1 USB Craft Port

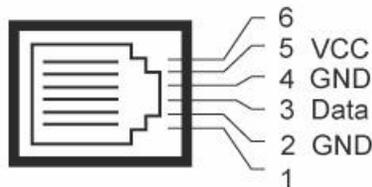
Use the front-panel USB craft port to connect the NetGuardian to a PC for onsite unit configuration. To connect via the USB craft port, use a standard A-B USB cable. This is the same type of cable used for many USB printers.

6.2 D-Wire Sensor Input

The port on your NetGuardian labeled, "**D-Wire**" supports the connection of up to 32 **D-Wire sensors**. The NetGuardian powers and communicates with your D-Wire sensors via straight-through RJ-11 cables.

Connecting D-Wire Sensors

Using a **6P4C, straight-through RJ-11 cable**, connect the D-Wire sensor port on the NetGuardian to the **In** jack on a D-Wire sensor. Chain additional sensors to the NetGuardian (using the same straight-through cables) from the **Out** jack on the previous sensor to the **In** jack on the next (i.e. Out on sensor 4 to In on sensor 5).



Pinout for D-Wire RJ-11 jacks

Note: Some sensors may consume 2 of your NetGuardian's sensor channels (the combined temp/humidity sensor, D-PK-DSNSR-12002, for example).

The Integrated temperature build option uses one of the maximum 32 sensors that are supported.

The D-Wire line of sensors includes temp/humidity, additional analogs, discretives, and more. Contact DPS at 1-800-693-0351 for information about available D-Wire sensors.

For details about configuring your sensors through the web interface, see the **Sensors** section of this manual.

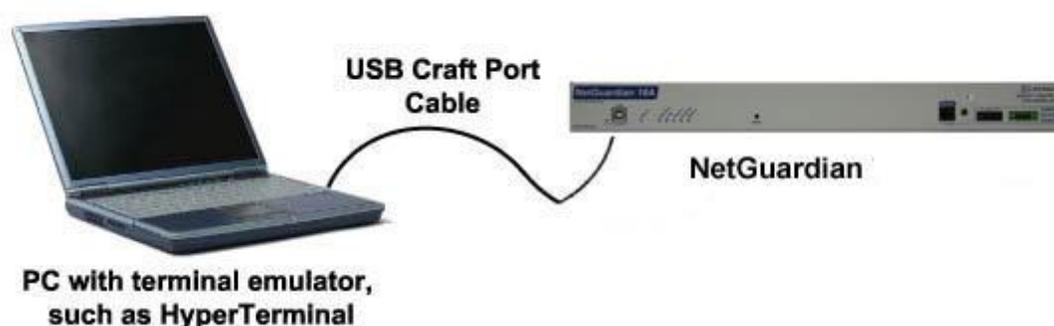
7 Quick Start: How to Connect to the NetGuardian

Most NetGuardian users find it easiest to give the unit an IP address, subnet and gateway through the front USB 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 NetGuardian 16A and access its Web Browser. See the "...via LAN" section of this chapter.

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

The simplest way to connect to the NetGuardian is over a physical cable connection between your PC's USB port and the unit's USB craft port. **Note:** You must be connected via craft port or Telnet to use the TTY interface. Make sure you are using a standard A-B USB cable (this same cable is commonly used for USB printers) to make a USB craft port connection. We'll be using HyperTerminal to connect to the unit in the following example - however, most terminal-emulating programs are also compatible.



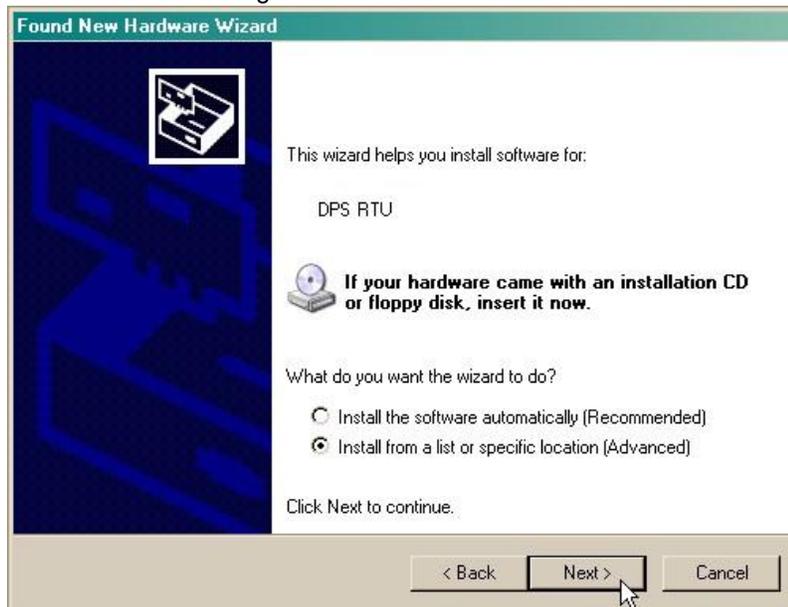
Note: The following images display the setup process done in Windows XP.

The following steps will occur the first time any DPS USB equipment is used on this PC. If you've used a different DPS USB device before and have installed the DPS USB drivers, then **skip to Step 9**.

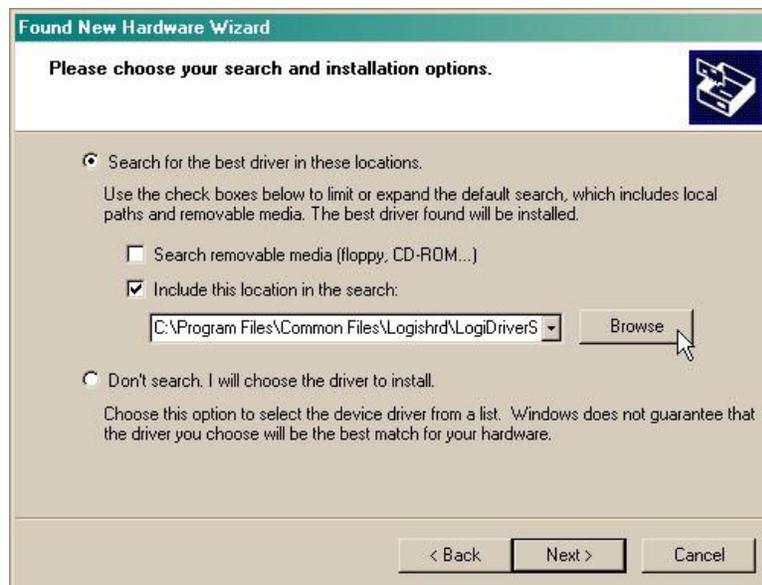
When you first connect the NetGuardian to your PC via USB, a "Found New Hardware" message will appear:



1. Click the "Found New Hardware" message/icon to launch the "Found New Hardware Wizard".

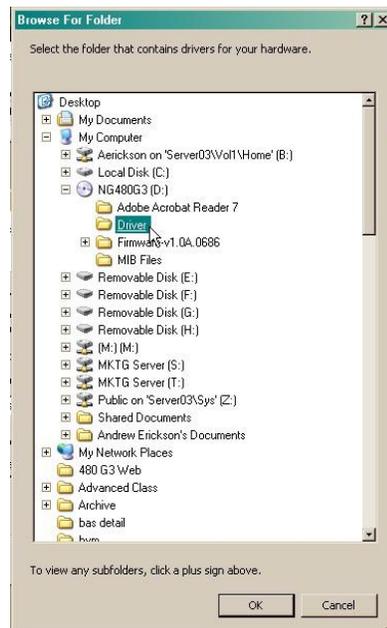


2. Select "Install from a list or specific location (Advanced)"
3. Click "Next >"



4. Select "Search for the best driver in these locations."
5. Insert NetGuardian Resource Disc (CD) into your PC.

6. Click "Browse"



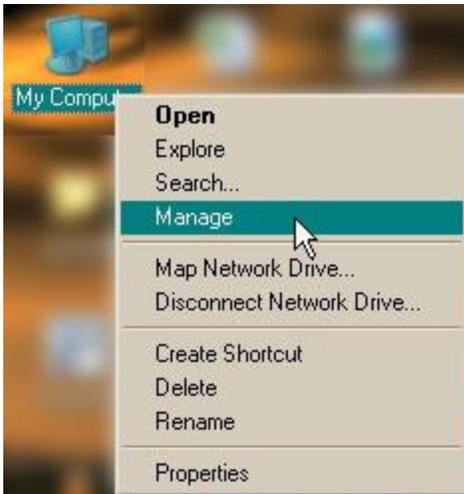
7. Select the "Driver" folder of your NetGuardian Resource Disc Disc (CD) and click "OK"

The following message will confirm installation of a new "USB Communications Port"

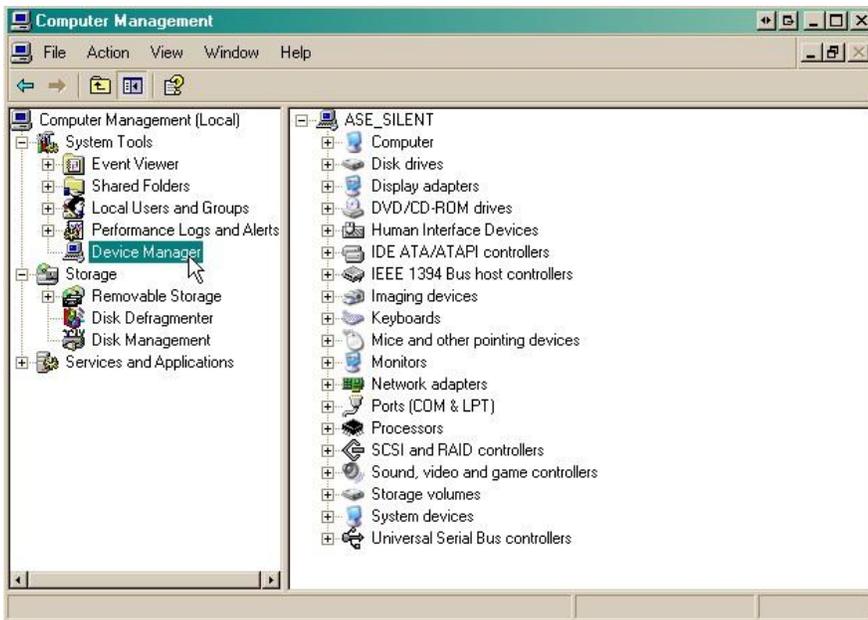


8. Click "Finish" to close the Wizard.

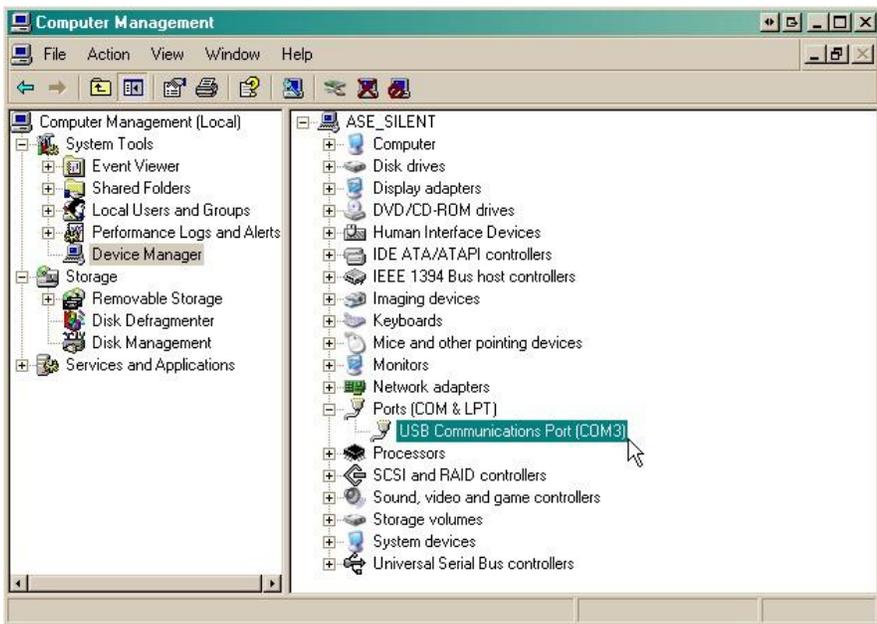
Now that the driver has been installed, a new COM port is being emulated on your PC. Before using hyperterminal, you must confirm the identity of that new COM port (COM1, COM2, COM3...) in the Windows Device Manager.



9. Right-click the "My Computer" icon on your desktop, then click "Manage"



10. Click "Device Manager" in the left pane.



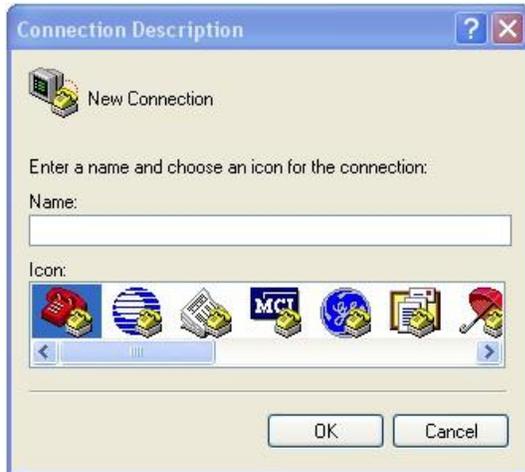
11. Expand the "Ports (COM & LPT)" section in the right pane. Look for "USB Communications Port (COMx)". Note the number of the COM port ("COM3" in the example above).

Now that you know which COM port to use, it's time to launch HyperTerminal (or other terminal software):

12. Click on the **Start** menu > select **Programs > Accessories > Communications > HyperTerminal**.



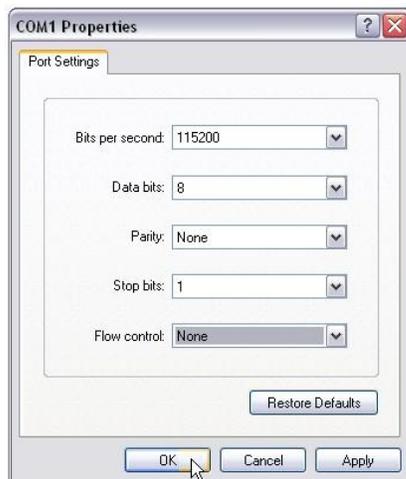
13. At the Connection Description screen, enter a name for this connection. You may also select an icon. The name and icon do not affect your ability to connect to the unit.



15. Select the following COM port options:

- Bits per second: 115200
- 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.



17. The NetGuardian's main menu will appear. Type C for C)onfig, then E for E)thernet. Configure the unit's IP address, subnet mask, and default gateway.

14. At the Connect To screen, use the drop-down menu to select the COM port you found earlier in the Device Manager.



16. 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.



18. ESC to the main menu. When asked if you'd like to save your changes, type Y for Y)es. Reboot the NetGuardian to save its new configuration.

```

COM30115200 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
Login: admin
Password: *****
Logged in successfully.

NG-LTG2 v1.0A.0287
(c)2008 DPS Telecom, Inc.
Reboot required.

C)onfig P)ing D)ebug e(X)it ?

```

```

Linked      : No
DHCP       : Disabled
Host Name   :
Unit IP     : 126.10.230.127 (126.10.230.127)
Subnet Mask : 255.255.192.0 (255.255.192.0)
Gateway     : 126.10.255.23 (255.255.255.255)
Unit MAC    : 00.10.81.00.53.33 (00.10.81.00.53.
U)nit Addr S)ubnet G)ateway D)HCP H)ost (ESC
E)thernet S)tats n(V)ram re(B)oot (ESC) ?
Do you want to save changes (y/N) : _

```

Now you're ready to do the rest of your configuration via LAN. Plug the NetGuardian into your LAN and see the "Logging On to the NetGuardian" section to continue databasing using the Web Browser.

7.2 ...via LAN



Connection through Ethernet port

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

1. Get a LAN crossover cable and plug it directly into the NetGuardian'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 unit via a Telnet session or via Web browser by using the unit's default IP address of **192.168.1.100**.
6. Provision the NetGuardian 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 NetGuardian and see Section 9, "Logging On to the NetGuardian" to continue databasing using the Web Browser.

8 TTY Interface

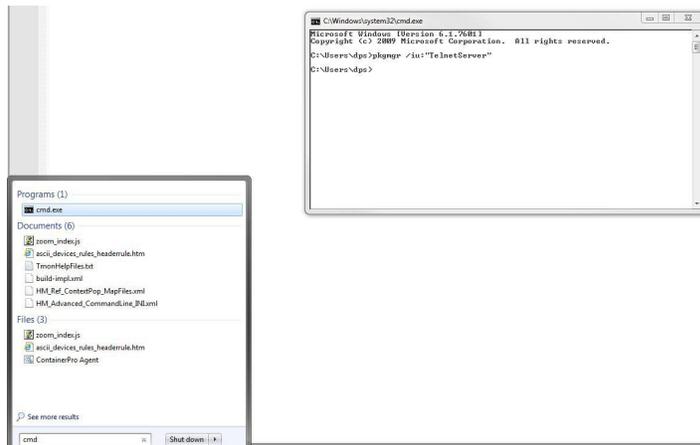
The TTY interface is the NetGuardian's built-in interface for basic configuration. From the TTY interface, you can:

- Edit the IPA, subnet, and gateway
- Configure primary port
- Set unit back to factory defaults
- Set DCP info for T/Mon polling
- Ping other devices on the network
- Debug and troubleshoot

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.

If you're using Windows 7, then you'll need to install telnet before you can use the TTY interface. To install telnet, open up your command line (type "cmd" into the search bar in the **Start Menu**). Select **cmd.exe** to run the command line.



From the command line, type in **pkgmgr /iu:"TelnetServer"** then press **enter**. When the command prompt appears again, the installation is complete.

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.

8.1 Configure Serial Port

```

test - HyperTerminal
File Edit View Call Transfer Help

Login: admin
Password: *****
Logged in successfully.

NetGuardian 16A v1.0G.0151
(c)2009 DPS Telecom, Inc.
**Reboot Required**

C)onfig P)ing D)ebug e(X)it ? C
E)thernet D)CP S)tats n(V)ram
Pr(I)maryPort re(B)oot (ESC) ? I

Port Type : 232          Baud      : 9600
Parity     : no          Stop       : 1
Flow       : None
RTS Head   : 0           RTS Tail  : 0

t{V)pe B)aud P)arity S)top
F)low H)ead T)ail (ESC) ?

```

Connected 0:00:31 Auto detect 2400 8-N-1 SCROLL CAPS NUM Capture Print echo

Serial port configuration

1. To enter configuration setting for the Serial Port, login to the TTY interface and press **C)onfig > pr(I)maryPort**.
2. Press the hot keys to toggle through the following options. (* Indicates default settings:)
NOTE: Default settings may not reflect the primary interface that shipped in the unit.
 - **Port Type:** 232*, 485, 202
 - **Baud:** 115200*, 57600, 19200, 9600, 4800, 2400, 1200
 - **Parity:** None*, even, odd
 - **Flow control:** None*, hardware
 - **Stop bits:** 1*, 2
3. Set the RTS head / tail if using 202. (Carrier time) Suggested settings are: head=60; tail=40; 0,0 if using RS232.

8.2 Set DCP Parameters

```

NetGuardian16 v1.0A.0047
(c)2009 DPS Telecom, Inc.

C)onfig P)ing D)ebug e(X)it ? C
E)thernet D)CP S)tats n(V)ram
Pr(I)maryPort re(B)oot (ESC) ? I

Port Type : 232      Baud      : 9600
Parity      : no     Stop       : 1
Flow        : None
RTS Head    : 0      RTS Tail   : 0

t(V)pe B)aud P)arity S)top
F)low H)ead T)ail t(U)ne (ESC) ? <--

E)thernet D)CP S)tats n(V)ram
Pr(I)maryPort re(B)oot (ESC) ? D

DCP Unit ID : 1
Listen DCP  : OVER LAN

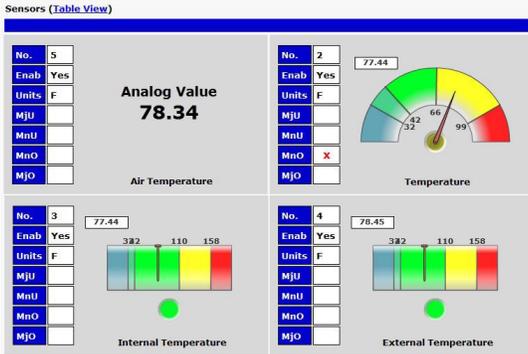
U)nitID L)isten (ESC) ?

```

Setting DCP Parameters

1. Login to the TTY interface and press C)onfig > D)CP.
 2. Set the DCP Address (Unit ID).
 3. Set the DCP listening type (toggle through the options). Choose over serial, over LAN*, or disabled.
- **Note:** If not using DCP to communicate with a DPS master like T/Mon, then set the address to 0 and disable listening.

9 NetGuardian Web Browser



The NetGuardian 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.

NOTE: Max number of users allowed to simultaneously access the NetGuardian via the Web is 1.

9.1 Logging on to the NetGuardian

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 NetGuardian" for instructions on initial configuration setup.

1. To connect to the NetGuardian 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**".

Username:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Login"/>	

Enter your password to enter the device's Web Browser Interface

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.



Hot Tip!

The max. number of users allowed to simultaneously access the NetGuardian via the Web is 1.

9.1.1 Changing the Default Password

The password can be configured from the **Provisioning > User Profiles** 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.

User Profile 1 (Administrator Profile)	
Suspend this Profile	<input type="checkbox"/>
Username	admin
Password	••••••••
Confirm Password	••••••••
Access Rights	
Check all	<input type="checkbox"/>
Edit logon profiles	<input checked="" type="checkbox"/>
Write config (change unit configuration)	<input checked="" type="checkbox"/>
View monitor pages	<input checked="" type="checkbox"/>
TTY access (access via Craft port or via Telnet)	<input checked="" type="checkbox"/>
Initialize config to factory defaults	<input checked="" type="checkbox"/>
Upload new firmware or new config	<input checked="" type="checkbox"/>
Get audit log	<input checked="" type="checkbox"/>
Purge (delete) audit log	<input checked="" type="checkbox"/>
Get (backup) config	<input checked="" type="checkbox"/>
<input type="button" value="Save"/>	
Go to profiles summary	

Global System Settings section of the Provisioning > System menu

10 NetGuardian - Quick Turn Up

The next 2 sections of this manual will walk you through some of the most common tasks for using the NetGuardian. You will learn how to send email notifications, and send SNMP traps to your alarm master - all using the Web browser. For details on entering your settings into each Web browser menu, the section "Provisioning Menu Field Descriptions" section.

10.1 How to Send Email Notifications

1. Click on the **Notifications** button in the **Provisioning** menu. You can setup as many as 8 different notifications. Begin the setup "wizard" by clicking **Edit** for a notification number. In this example, we'll setup Notification 2 to send emails.

Notifications				
Summary				
Id	Notify On	Type	Details	
1	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
2	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
3	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
4	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
5	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
6	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
7	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>
8	Disabled			<input type="button" value="Edit"/> <input type="button" value="Test"/>

2. At the **Notification Setting** screen, use the drop down box to set what events to use for this notification. Now, select the **Send Email Notification** button and click **Save and Next**.

Notification 1	
Status	Notification Disabled <input type="button" value="v"/>
Type	<input checked="" type="radio"/> Send Email <input type="radio"/> Send SNMP <input type="radio"/> Relay
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>	

3. At the **Email Notification** screen, you'll enter your email server settings. Enter the **IP address** or **Host Name** of your email server. Enter the **Port Number** (usually 25) and the **"To" Email Address** of the technician that will receive these emails. If authentication is required, chose the type and fill in the necessary fields. Click **Next**.

Notification 1 (Email)	
SMTP Server IP or Host Name	smtp.gmail.com
Port (Usually Use 25)	465 <input checked="" type="checkbox"/> Use SSL
"From" E-mail Address (Global)	ng16a@dpstele.net
"To" E-mail Address	user123@gmail.com
How to authenticate	
<input type="radio"/> No authentication <input checked="" type="radio"/> POP before SMTP authentication <input checked="" type="radio"/> SMTP authentication	
User name	user123
Password	user123
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>	

4. At the **Schedule** screen, you'll select the exact days/times you want to receive email notifications. You can set 2 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.)

Notification 1 (Schedule)

Id	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time
1	<input checked="" type="checkbox"/>	Any Time 12 h 0 min AM to 11 h 59 min PM						
2	<input checked="" type="checkbox"/>	Any Time 12 h 0 min AM to 11 h 59 min PM						

Back Save and Finish

5. If you chose to test the email notification you've just setup, you will prompted with a pop up . 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.

6. Now you will associate this notification to an alarm (system, base, analog, etc.) You have 8 notification devices available to use. In the image below, you might assign **Notification Device 1** to **Alarm 1**. This means that you would receive an email notification when an alarm for **Alarm 1 (SERVER ROOM)** occurs.

DPS Telecom
Network Monitoring Solutions
Upload | Logout (admin)

Monitor
Alarms
Controls
Analog
Sensors
System Alarms
Provisioning
System
User Profiles
Ethernet
SNMP
Phone List
Notifications
Alarms
Controls
Analog

Notifications

Summary

Id	Notify On	Type	Details	Edit	Test
1	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test
	Disabled			Edit	Test

DPS Telecom
Network Monitoring Solution
Upload | Logout (admin)

Monitor
Alarms
Controls
Analog
Sensors
System Alarms
Provisioning
System
User Profiles
Ethernet
SNMP
Phone List
Notifications
Alarms
Controls
Analog

Alarms

Id	Description	Display Map	Rev.	1	2	3	4	5	6	7	8
1	SERVER ROOM	Advanced<<	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	WEST SIDE DOOR	Advanced>>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	RECTIFIER	Advanced>>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	MICROWAVE	Advanced>>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On Set: Alarm
On Clear: Clear
Qual. Time: 0sec
Qual. Type: OnSet

10.2 How to Send SNMP Traps

1. Click on the **SNMP** button in the **Provisioning** menu. Enter the **SNMP GET** and **SNMP SET** community strings for your network, then click **Save**. The typical SNMP SET and GET community strings for network devices is "public". As an added security measure, we've made our default "dps_public".

SNMP					
Global Settings					
Get Community	dps_public				
Set Community	dps_public				
Read and Write Access	SNMPv3, SNMPv2c, and SNMPv1 ▾				
SNMPv3 Engine ID	80000a7a03001081006603				
SNMPv3 Users					
Id	SNMPv3 Username	Auth Type	Auth Pass	Priv Type	Priv Pass
1		No Auth ▾		No Priv ▾	
2		No Auth ▾		No Priv ▾	
3		No Auth ▾		No Priv ▾	
Save					

2. Click on the **Notifications** button in the **Provisioning** menu. You can setup as many as 8 different notifications. Begin the setup "wizard" by clicking **Edit** for a notification number. In this example, we'll setup Notification 4 to send SNMP traps to your alarm master.

3. At the **Notification Setting** screen, use the drop down box to set what events to use for this notification. Now, select the **Send SNMP Notification** button and click Next.

Notification 1	
Status	Notification Disabled ▾
Type	<input type="radio"/> Send Email <input checked="" type="radio"/> Send SNMP <input type="radio"/> Relay
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>	

4. At the **SNMP Notification** screen, you'll enter your network's SNMP settings. Enter the **IP address** of your SNMP Trap Server. Enter the **Trap Port Number** (usually 162) and the **Trap Community** password. Click **Save and Next**.

Notification 1 (SNMP)	
SNMP Trap Server IP	
Trap Port No. (Usually Use 162)	0
Trap Community	
Trap Type	SNMPv1 ▾
SNMPv3 user (see SNMP menu)	User 1 () ▾
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>	

5. At the **Schedule** screen, you'll select the exact days/times you want to receive SNMP notifications. You can set 2 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 **Save and Finish**. To try a test notification, click the **Test** button (See next step.)

Notification 1 (Schedule)

Id	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time
1	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM						
2	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM						

6. If you chose to test the email notification you've just setup, you will be prompted with a pop up. Click **OK** to send a test SNMP alarm notification. Confirm all your settings by checking your alarm master to see if the SNMP trap was received.

NOTE: This test only means that your notification settings are correct, but you still need to assign the notification to an alarm point. See Step 6 in "How to Send Email Notifications" for more detail.

11 Provisioning Menu Field Descriptions

NetGuardian configuration is performed from the **Provisioning** menus, the menu options in green on the left-side of the web interface. The following pages provide a brief description of the options available in each menu.

Saving Configuration Changes to the NetGuardian:

At the bottom of each screen you access from the **Provisioning** Menu, you will see a **Save** button. Clicking Save will cache your changes locally. The web interface will then prompt you to either **Write** your changes to the unit or **Reboot** the unit for changes to take effect in the top-left corner of your browser. The relevant options will be highlighted in the **Device Access** options.

Note: If the unit prompts you to both Write changes to the unit **and** Reboot, you will Write your changes first. Rebooting before without writing to the unit (if a Write is required) will cause you to lose your configuration changes.

Please **WRITE** to the unit after you are finished with your changes!
Please **REBOOT** the unit for changes to take effect!

Status messages on the NetGuardian Device Access menu, inform you how to implement your changes

Device Access	Device Access
Backup Config	Backup Config
Read	Read
Write	Write (required)
Initialize	Initialize
Get Log	Get Log
Purge Log	Purge Log
Reboot	Reboot

The control menu highlights items that must be completed for your changes to take effect

11.1 System

From the **Provisioning > System** menu, you will configure and edit the global system, call, T/Mon and control settings for the NetGuardian.

The Provisioning > System menu

Global System Settings	
Name	A name for this NetGuardian unit. {Optional field}
Location	The location of this NetGuardian unit. {Optional field}
Contact	Contact telephone number for the person responsible for this NetGuardian unit. (Optional field)
DCP Responder Settings (For use with T/Mon)	
DCP Unit ID / Protocol	User-definable ID number for the target unit (DCP Address) and desired protocol.
DCP LAN	Enter the DCP port for the target unit (UDP/TCP port) and desired protocol.
Analog and Sensors History	
Get Analog History	Download a log of all configured analog, sensor, and modbus values
Get Discrete History	Download a log of all discrete alarm values. This also includes threshold alarms and not detected alarms.
Erase analog and discrete history	Erase the log of all configured analog, sensor, modbus, and discrete values.
Craft Port	
Port Select	Select which port to use for craft.

11.2 User Profiles

Clicking **User Profiles** gives you access to modify the default username and password, and to edit the administrator profile and create up to 9 additional unique user profiles, each with different access rights to the NetGuardian's web interface.

User Profiles Summary			
Id	Username	Status	
1	admin	Default	<input type="button" value="Edit"/> (Administrator Profile)
2	tech1	Active	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
3	after_hours_tech	Active	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
4	tech2	Active	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Configure access privileges for users in the User Profile screen

Note: The first user profile in the User Profiles menu is the Administrator's Profile. Access rights for the administrator's profile are all enabled and may not be disabled, nor can the profile be deleted or suspended. This is a precaution to prevent a situation in which an access right is disabled for all users. You may still edit the **Username, Password, and Active Days** fields for the Administrator Profile.

User Profile 1 (Administrator Profile)	
Suspend this Profile	<input type="checkbox"/>
Username	admin
Password
Confirm Password
Access Rights	
Check all	<input type="checkbox"/>
Edit logon profiles	<input checked="" type="checkbox"/>
Write config (change unit configuration)	<input checked="" type="checkbox"/>
View monitor pages	<input checked="" type="checkbox"/>
Send relay commands	<input checked="" type="checkbox"/>
TTY access (access via Craft port or via Telnet)	<input checked="" type="checkbox"/>
Initialize config to factory defaults	<input checked="" type="checkbox"/>
Upload new firmware, description recordings, or config	<input checked="" type="checkbox"/>
Get audit log	<input checked="" type="checkbox"/>
Purge (delete) audit log	<input checked="" type="checkbox"/>
Get (backup) config	<input checked="" type="checkbox"/>
Get and delete analog history	<input checked="" type="checkbox"/>
Get and delete description recordings	<input checked="" type="checkbox"/>
<input type="button" value="Save"/>	
Go to profiles summary	

The User Profiles screen allows you control user functionality

To create or edit any of the 10 user profiles (including the default), click the **Edit** button. From there, you can change all configurable settings for a user profile.

	User Profile
Suspend this Profile	If this box is checked, the profile will not be able to access the NetGuardian.
Username	Enter a username or a user description

User Profile	
Password	Enter a unique user password Note: All passwords are AES 128 encrypted.
Confirm Password	Re-enter the password.
Access Rights	
Check all	Enables all Access Rights
Edit logon profiles	Enables the user to add/modify user profiles and password information.
Write Config (change unit configuration)	Enables the user to change the unit config by accessing the Write feature in the control menu.
View monitor pages	Allows the user to access Monitor menu options.
Send relay commands	Allows the user to send commands to operate the device's control relays.
TTY access (access via Craft port or via Telnet)	Grants the user access to the unit via TTY interface (via craft or telnet).
Initialize config to factory defaults	Allows the user to use the Initialize option in the Device Access menu, resetting the NetGuardian to factory default settings. All user settings will be lost.
Upload new firmware or config	Allows the user to upload firmware or backed-up configuration files.
Get audit log	Allows the user to access the Audit Log (Get Log command).
Purge (delete) audit log	Allows the user to delete the existing audit log.
Get (backup) config	Backs-up all user profile configuration settings.
Get and delete analog history	Allows the user to access and delete the analog and sensor history.

User profile field descriptions

Once you've finished configuring a profile, click **Save** to store your changes locally.

To access another profile, simply click **Go to profiles summary** at the bottom of the page. You may also navigate away from the user profiles screen at any time by clicking any of the menu options on the left side of the screen.

11.3 Ethernet

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

Ethernet Settings	
MAC Address	0:10:81:0:6f:19
Host Name	<input type="text"/> ()
Enable DHCP	<input type="checkbox"/>
Unit IP	206.169.87.183 (206.169.87.183)
Subnet Mask	255.255.255.240 (255.255.255.240)
Gateway	206.169.87.177 (206.169.87.177)
DNS Server 1	8.8.8.8 (8.8.8.8)
DNS Server 2	4.4.4.4 (4.4.4.4)
<input type="button" value="Save"/>	

The Provisioning > Ethernet menu

Ethernet Settings	
MAC Address	Hardware address of the NetGuardian. (Not editable - For reference only.)
Host Name	Used only for web browsing. Example: If you don't want to remember this NetGuardian's IP address, you can type in a name in this field, such as NG16. Once you save and reboot the unit, you can now browse to it locally by simply typing in "NG16" 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 NetGuardian.
Subnet Mask	A road sign to the NetGuardian, 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 NetGuardian 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 if not using.

Note: DNS Server settings are required if a hostname is being used for ping targets.

11.4 RADIUS

RADIUS (Remote Authentication Dial In User Service) is an industry-standard way to manage logins to many different types of equipment in one central location. The NetGuardian connects to your central RADIUS server. Every time a device receives a login attempt (usually a username & password), it requests an authentication from the RADIUS server. If the username & password combination is found in the server's database, an affirmative "access granted" reply is sent back to the unit device, allowing the user to connect.

RADIUS	
Global Settings	
Retry	3
Time-out	5sec
Server 1	
IPA	255.255.255.255 (Disabled)
Port	1812
Secret	labnetwork
Server 2	
IPA	255.255.255.255 (Disabled)
Port	1812
Secret	
<input type="button" value="Save"/>	

RADIUS configuration screen

Username:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Login"/>	

*RADIUS server prompt for Username **and** Password.*

Global Settings	
Retry	Enter the number of times the RADIUS server should retry a logon attempt
Time-out	Enter the number of seconds before a logon request is timed out
Servers 1 / 2	
IPA	Enter the IP address of the RADIUS server
Port	Port 1812 is an industry-standard port for using RADIUS
Secret	Enter the RADIUS secret in this field

After successfully entering the settings for the RADIUS server, the NetGuardian Web Browser will prompt users for both a Username and Password, which will be verified using the information and access rights stored in the RADIUS database.

RADIUS logons are **case-sensitive**. If the RADIUS server is unavailable or access is denied, the local user profiles will work via craft port access only. Also, the "dictionary.dps" files (included on the Resource Disk) needs to be loaded on the RADIUS server for access-right definition. If RADIUS is enabled on the NetGuardian, local authentication will be invalid through the web and can only work via craft port.

11.5 Serial Ports

The **Provisioning > Serial Port** menu allows you to change settings depending on the port type of your NetGuardian. From this menu, you can select a mode of operation, enable reach-through serial port functionality, and enable the NGDdx expansion unit.

Serial Port Settings

Port Location Primary port located in the back of the unit.

Port Configuration

Port Type:	Baud:	Parity:	Stop Bits:
232 ▼	2400 ▼	8-bit data, no parity ▼	1 ▼
RTS head:	RTS tail:		
0	0		

Reach-Through

Enable Reach-Through

Port: 3000	Type: TCP ▼
------------	-------------

NGDdx 1-DX unit ▼

The Provisioning > Serial Ports menu

Location	
A reminder that your primary serial port is located on the back of the NetGuardian chassis.	
Port Configuration	
Port Type	Select the serial port for your build of the NetGuardian. Choose from 232, 485...
Baud, Parity, and Stop Bits Select the appropriate settings from the drop-down menu.	
RTS Head	Only used if your NetGuardian was built with a 202 modem. The most commonly used value is 30.
RTS Tail	Only used if your NetGuardian was built with a 202 modem. The most commonly used value is 10.
Reach-Through	
Enable Reach-through	Checking this box enables the port to be used as a terminal server. Most commonly used to Telnet through the port over LAN to a hub, switch, or router. From a command prompt, type the following (<i>note the spaces between each entry</i>): telnet [IP address] [port] Example: telnet 192.168.1.100 3000
Port	Port number used for reach-through to a serial device.
Type	Select TCP or UDP traffic to be passed through to a serial device.
NGDdx	
NGDdx	Number of expansion units being enabled.

11.6 SNMP

The **Provisioning > SNMP** menu allows you to define and configure the SNMP settings.

SNMP					
Global Settings					
Get Community	dps_public				
Set Community	dps_public				
Read and Write Access	SNMPv3, SNMPv2c, and SNMPv1 ▾				
SNMPv3 Engine ID	80000a7a03001081006603				
SNMPv3 Users					
Id	SNMPv3 Username	Auth Type	Auth Pass	Priv Type	Priv Pass
1	<input type="text"/>	No Auth ▾	<input type="text"/>	No Priv ▾	<input type="text"/>
2	<input type="text"/>	No Auth ▾	<input type="text"/>	No Priv ▾	<input type="text"/>
3	<input type="text"/>	No Auth ▾	<input type="text"/>	No Priv ▾	<input type="text"/>
Save					

SNMP Menu

Global Settings	
Get Community	Community name for SNMP requests.
Set Community	Community name for SNMP SET requests.
Read and Write Access	This field defines how the NetGuardian unit may be accessed via SNMP. This can be set to the following: <ul style="list-style-type: none"> • Access Disabled- Restricts all access to unit via SNMP • SNMP v2c only- Allows SNMPv2c access only • SNMP v2c and SNMP v1-Only- Allows SNMPv1 and SNMPv2c access
SNMPv3 Engine ID	The engine identification that uniquely identifies the agent in the device.
SNMPv3 Username	Community name for SNMP requests.
Auth Type	Select the authentication type: MD5, SHA1, or No Auth
Auth Pass	Specify the authentication password.
Priv Type	Select the privacy type: DES, AES, or No Priv
Priv Pass	Specify the privacy password.

Fields in the Provisioning > SNMP settings

11.7 Notifications

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

Once you've chosen which notification you want to setup, check the **Enable Notification** to turn it "on" and select a notification method.

11.7.1 Notification Settings

Email Notification Fields

Notification 1 (Email)

SMTP Server IP or Host Name	smtp.gmail.com	
Port (Usually Use 25)	465	<input checked="" type="checkbox"/> Use SSL
"From" E-mail Address (Global)	ng16a@dpstele.net	
"To" E-mail Address	user123@gmail.com	
How to authenticate		
<input type="radio"/> No authentication <input checked="" type="radio"/> SMTP authentication		
User name	user123	
Password	user123	
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>		

Editing Email Notification Settings

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.
Use SSL	Check this box to use SSL encryption. Currently this feature has been tested with Gmail. To send with Gmail SMTP server, do the following: <ul style="list-style-type: none"> • SMTP Server IP or Host Name should be set to "smtp.gmail.com" • Port number must be set to 465. • SMTP authentication radio button must be selected. • User name and password (below under "How to Authenticate") are the user name and password for the Gmail account in use.
"From" E-mail Address	Displays the email address (defined in the Edit menu > System) that the NetGuardian will send emails from. Not editable from this screen.
"To" E-mail Address	The email address of the person responsible for this NetGuardian, who will receive email alarm notifications.
User Name	User name for the Gmail account being used.
Password	Password for the Gmail account being used.

SNMP Notification Fields

Notification 1 (SNMP)

SNMP Trap Server IP	
Trap Port No. (Usually Use 162)	0
Trap Community	
Trap Type	SNMPv3 ▾
SNMPv3 user (see SNMP menu)	User 1 () ▾
<input type="button" value="Back"/> <input type="button" value="Save and Next"/>	

Editing SNMP notification settings

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.
Trap Type	Indicate whether you would like to send SNMP v1, v2c, or v3 traps.
SNMPv3 User	Select the user. User is configured in the SNMP menu.

Relay Notification Field

Editing SNMP notification settings

SNMP Notification	
Select Relay to Latch	Select the number of the relay (1-4 or 1-8, depending on your build option) you want to latch upon the alarm triggering.

11.7.2 Schedule

The notifications scheduling menu is where you will tell the NetGuardian exactly which days and times you want to receive alarm notifications. You set 2 different schedules for each.

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 this is if you want to receive alarm notifications at any time for the day(s) you've selected.
Notification Time	Tells the unit to only send notifications during certain hours on the day(s) you've selected.

11.8 Alarms

Discrete alarms are configured from the **Provisioning > Alarms** menu. Descriptions for the alarm points, polarity (normal or reversed) and notification type(s) are defined from this menu. You also have the option to use **Basic** or **Advanced** configuration methods, explained in this section.

The screenshot shows the 'Alarms' configuration interface. It features a table with columns for 'Id', 'Description', 'Display Map', 'Rev.', and notification devices 1 through 8. Two rows are visible: '1 Transmitter A' with 'Advanced>>' and '2 Transmitter B' with 'Advanced<<'. Below the table, there are configuration fields for 'On Set / Color' (Standby / Blue), 'On Clear / Color' (Online / Green), 'Qual. Time' (0sec), and 'Qual. Type' (OnSet).

The Provisioning > Alarms menu

Basic Alarm Configuration	
ID	Alarm ID number.
Description	User-definable description for the discrete alarm point.
Rev (Reverse)	Reverse: Check this box to reverse the polarity of the alarm point. Leaving this option un-checked means a normally open contact closure is an alarm. When polarity is reversed, a normally closed alarm point is clear when closed.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.
Advanced Alarm Configuration (Advanced>>)	
On Set/Color	User-definable description (condition) and color that will appear for the discrete alarm input on Set. Example: "Alarm".
On Clear/Color	User-definable description (condition) and color that will appear for the discrete alarm input on Clear: "Example: "Alarm Cleared".
Qual. Time (Qualification Time)	The length of time that must pass, without interruption, in order for the condition to be considered an Alarm or a Clear.
Qual. Type (Qualification Type)	Allows you to choose whether you want to apply the Qualification Time to the alarm Set, Clear, or Both.

11.9 Exp1 Alarms

The NetGuardian 16A allows for the addition of an NGDdx expansion module (see 11.1 Serial Ports), which adds an additional 64 discreet alarms. Expansion alarms are configured from the **Provisioning > Exp1 Alarms** menu. Descriptions for the alarm points, polarity (normal or reversed) and notification type(s) are defined from this menu.

The screenshot shows the 'Exp1 Alarms' configuration interface. At the top left is a 'Save' button. Below it is a table with the following structure:

Id	Description	Display Map	Rev.	Notification Devices								
				1	2	3	4	5	6	7	8	
1			<input type="checkbox"/>									
2			<input type="checkbox"/>									
3			<input type="checkbox"/>									

Provisioning > Exp1 alarms

The configuration options of Exp1 Alarms is the same as the Basic Alarm Configurations of the base alarms.

Exp1 Alarms	
ID	Alarm ID number.
Description	User-definable description for the discrete alarm point.
Rev (Reverse)	Reverse: Check this box to reverse the polarity of the alarm point. Leaving this option un-checked means a normally open contact closure is an alarm. When polarity is reversed, a normally closed alarm point is clear when closed.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.

11.10 Controls

The NetGuardian's 1-8 control relays can be configured in the **Provisioning > Controls** menu. You can enter your own description for these relays and designate them to a notification device(s).

The screenshot shows the 'Controls' configuration interface. It features a table with columns for ID, Description, Display Map, and notification devices 1-8. The first row is expanded to show configuration options:

Id	Description	Display Map	Notification Devices									
			1	2	3	4	5	6	7	8		
1	Front Door	Details<<	<input type="checkbox"/>									
Derived Description: <input type="text"/> <input type="button" value="Parse"/> Momentary time (e.g. 500ms, 5s, 1m): <input type="text" value="1sec"/>												
2	Back Door	Details>>	<input type="checkbox"/>									
3	Switch		<input type="checkbox"/>									

The Provisioning > Controls screen

Basic Controls Configuration	
ID	ID number for the control relay.
Description	User-definable description for the NetGuardian's control relay.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications

	for the control relay.
Details	
Derived Description	Control relays and virtual alarms can be created with a derived formula and tested with the <i>Parse</i> button. See below for more information.
Momentary Time	Control on time (in milliseconds) when you execute the MOM command. Max limit of 600 seconds.

Derived controls can be created from derived formulas using the following operations:

- _OR** : Set the current operation to OR.
- _AN** : Set the current operation to AND.
- _XR** : Set the current operation to XOR.
- D**: Tag to change the active display number.
- .** : Used like a comma to delimit numbers.
- : Used to specify a range of points.



Spaces included here are for readability purposes only.



Hot Tip!

- Precedence of the operations are always left to right.
- All number references can either be one or two digits.

_OR D1.3-5 is logically equivalent to (1.3 || 1.4 || 1.5)

_AN D 1.3-5 D2.6 _OR D3.7 is logically equivalent to ((1.3 && 1.4 && 1.5 && 2.6) || 3.7)

_OR D01.03-05 D02.06 _AN D02.07 D03.10.-12 is logically equivalent to ((1.3 || 1.4 || 1.5 || 2.6)&& (2.7 && 3.10 && 3.12))

_AN D1.3-5D2.6_OR.7D3.10.12 is logically equivalent to ((1.3 && 1.4 && 1.5 && 2.6) || 2.7 || 3.10 || 3.12))

11.11 Exp1 Controls

The NetGuardian 16A allows for the addition of an NGDdx expansion module (see *Serial Ports* section), which adds an additional 8 control relays. Expansion control relays are configured from the **Provisioning > Exp1 Controls** menu. Descriptions for the control relays and notification type(s) are defined from this menu.

Exp1 Controls

Save

Id	Description	Display Map	1	2	3	4	5	6	7	8
1	<input type="text"/>		<input type="checkbox"/>							
2	<input type="text"/>		<input type="checkbox"/>							
3	<input type="text"/>		<input type="checkbox"/>							
4	<input type="text"/>		<input type="checkbox"/>							
5	<input type="text"/>		<input type="checkbox"/>							
6	<input type="text"/>		<input type="checkbox"/>							
7	<input type="text"/>		<input type="checkbox"/>							
8	<input type="text"/>		<input type="checkbox"/>							

Save

Provisioning > Exp1 Controls

Exp1 Controls	
ID	ID number for the control relay.
Description	User-definable description for the NetGuardian's control relay.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for the control relay.

11.12 Analogs

The NetGuardian can have up to 6 analog channels. The 5th and 6th channels are dedicated to monitoring the power input (channel is not used if build option was not selected). These channels support the entire range of power inputs that the NetGuardian can support. Channels 1-4 are user-definable. Each channel must be individually configured to monitor data.

Note: Only analogs supported by the units hardware will appear in the NetGuardian web browser interface.

User Analogs

Id	Enab	Description	Display Map	Rev.	1	2	3	4	5	6	7	8
1	<input type="checkbox"/>	Current Transducer	Details<<		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record Freq: <input type="text" value="5min"/> Deadband: <input type="text" value="1"/> Qual. Time: <input type="text" value="0ms"/> Qual. Type: <input type="text" value="OnSet"/>		Scaling: Actual to Display Units: VDC to A Low ref: 1 to 0 High ref: 5 to 200		Thresholds: MjU: <input type="text" value="75.00"/> MnU: <input type="text" value="100.00"/> MnO: <input type="text" value="175.00"/> MjO: <input type="text" value="200.00"/>		Push-to-Talk: Enable: <input type="checkbox"/> Discrete Input: <input type="text" value="1"/> Qual. Time: <input type="text" value="500"/> ms						
Analog Gauge Type:												
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>None</p> <input type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> <div style="text-align: center;">  <input checked="" type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> </div>												
2	<input type="checkbox"/>	User chan 2	Details>>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	User chan 3	Details>>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	User chan 4	Details>>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Provisioning > Analogs menu

Basic Analog Configuration	
ID	Analog ID number.
Enab	Check this box to enable the analog.
Description	User-definable description for the analog channel.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.
Rev.	Reverse the polarity of the analog reading.
Advanced Analog Configuration (Details>>)	
Record Freq	The amount of time, in minutes (min) or seconds (s), between each log of each analog value to history.
Deadband	The amount (in volts) that the channel needs to go above or below a threshold in order to cause an alarm.
Qual. Time	The length of time that must pass, without interruption, in order for the condition to be considered an Alarm or a Clear.
Qual Type	Allows you to choose whether you want to apply the Qualification Time to the alarm - Set, Clear, or Both.
Units	User-definable display units or optional choice between Fahrenheit and Celsius temperatures. The most common are: VDC = Voltage %H = Humidity F = Fahrenheit C = Celsius
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.
Thresholds	These settings are set 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).
Push-to-Talk: Enable	Checking this box enables Push-to-Talk feature for this analog.
Push-to-Talk: Discrete Input	Assign the alarm point associated with this analog.
Push-to-Talk: Qual. Time (ms)	Length of time, in milliseconds, that an alarm point must be set before an analog can post.
Analog Gauge Type	Select the color-coded gauge that best represents your data. Selecting None will disable the analog gauge and only a numerical representation of the value will be displayed under Monitor > Analogs .

11.13 Sensors

The NetGuardian supports up to 32 daisy-chained D-Wire sensors via its D-Wire input. Sensors connected to the NetGuardian will appear on the NetGuardian's web interface. The background color of the ROM field informs the user of the sensor's configuration state.

Also the NetGuardian's first D-Wire sensor used to monitor the internal temperature. The internal temperature sensor measures a range of -40° F to 180° F (-40° C to 82.2° C) within an accuracy of about $\pm 2^\circ$.

Basic configuration for the NetGuardian's D-Wire temperature sensors can be accomplished from the **Provisioning > Sensors** menu. From this screen, you can configure D-Wire sensors, select notification devices, and set thresholds.

Sensors (■ - detected and configured ■ - detected and NOT configured ■ - NOT detected and configured ■ - sensor type NOT supported)

Rediscover

Id	ROM ID	Description	Display	Map	1	2	3	4	5	6	7	8
1	28e349e103000056	Sensor 1	Details<<		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record Freq: <input type="text" value="15min"/> Deadband: <input type="text" value="1"/> Qual. Time: <input type="text" value="0ms"/> Qual. Type: <input type="text" value="OnSet"/>		Type: <input type="text" value="Temperature"/> Temperature Units: <input checked="" type="radio"/> F <input type="radio"/> C		Thresholds: MjU: <input type="text" value="32.00"/> MnU: <input type="text" value="42.00"/> MnO: <input type="text" value="110.00"/> MjO: <input type="text" value="158.00"/>								
Analog Gauge Type: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>None</p> <input type="radio"/> </div> <div style="text-align: center;">  <input checked="" type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> <div style="text-align: center;">  <input type="radio"/> </div> </div>												
2	3ddd6b035007005e	Sensor 2	Details>>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	285c51e103000037	Sensor 3	Details>>		<input checked="" type="checkbox"/>	<input type="checkbox"/>						

The Provisioning > Sensors menu

Basic Sensor Configuration	
ID	Sensor ID number.
ROM ID	<p>The ID number found on the sticker of the temperature sensor node. Your NetGuardian 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.</p> <p>Green - The sensor is connected and properly configured.</p> <p>Yellow - The sensor is connected but has not yet been configured (fill in your configuration fields and click Save to configure the sensor).</p> <p>Red - The sensor is not detected and configured (i.e. a previous configured sensor is no longer connected).</p> <p>Blue - The sensor is not supported by the NetGuardian.</p> <p>To reconfigure or disable the Sensor ID, simply delete any data in this field and click Save.</p> <p>The unit will refresh the sensor ID on that channel.</p>
Description	User-definable description for the sensor channel.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.
Advanced Sensor Configuration (Details>>)	
Record Freq	The amount of time, in minutes (min) or seconds (s), between each recorded sensor value.
Deadband	The amount (in native units) that the channel needs to go above or below a threshold in order to cause an alarm.
Qual. Time	The length of time that must pass, without interruption, in order for the condition to be considered an Alarm or a Clear.
Qual. Type	Allows you to choose whether you want to apply the Qualification Time to the alarm - Set, Clear, or Both.
Sensor Type	Select the type of D-Wire sensor you are using for this point.
Temperature Units	Select whether you want the temperature displayed in Fahrenheit or Celsius.
Thresholds	These settings are set 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).
Analog Gauge Type	Select the color-coded gauge that best represents your data. Selecting None will disable the analog gauge and only a numerical representation of the value will be displayed under Monitor > Sensors .

Note: Before plugging in any additional D-Wire Sensors, set up the internal sensor.

11.14 DSCP

The NetGuardian supports DPS Server Client Protocol (DSCP) for communication with external DSCP devices (such as the Track Monitor). The **Provisioning > DSCP** menu allows you to configure settings for sync'd DSCP devices.

Note: The Track Monitor DSCP device supports 2 alarm points and 6 analog channels. The 2 alarm points and analog channels 1 & 2 come pre-configured to the unit; however, you are able to modify the description for the point.



NetGuardian 16A

Home | Upload | Logout (admin)

Network Monitoring Solutions

Monitor

Provisioning

System

User Profiles

Ethernet

RADIUS

Serial Port

SNMP

Notifications

Alarms

Controls

Analog

D-Wire Sensors

Modbus Devices

Modbus Registers

DSCP (Wireless)

Ping Targets

System Alarms

BAU Globals

Timers

Date and Time

Device Access

DSCP (Wireless)

Module Configuration

Module Address High	<input type="text" value="0013a200"/>	<input type="button" value="Unbind Module"/>
Module Address Low	<input type="text" value="40c53755"/>	
Update Frequency	<input type="text" value="30sec"/>	
Type	Track Monitor ▾	
Comm Fail Timeout	<input type="button" value="Edit Timer"/>	
Sensor Power	<input checked="" type="radio"/> Max Sensor Life <input type="radio"/> Max Battery Life	

Point Configuration

Pnt	Description Display Map	Reverse	1	2	3	4	5	6	7	8
46	<input type="text" value="Sensor Power Fault"/>	<input type="checkbox"/>								
47	<input type="text" value="Sensor Power Low"/>	<input type="checkbox"/>								
48	<input type="text" value="XBEE Fault"/>	<input type="checkbox"/>								
49	<input type="text" value="Sensor 1 Fault"/>	<input type="checkbox"/>								
50	<input type="text" value="Sensor 2 Fault"/>	<input type="checkbox"/>								
51	<input type="text" value="Sensor 3 Fault"/>	<input type="checkbox"/>								
52	<input type="text" value="Sensor 4 Fault"/>	<input type="checkbox"/>								

Analog Configuration

Id	Description		1	2	3	4	5	6	7	8
1 (sensor 27)	<input type="text" value="Battery Voltage"/> Details>>	<input type="checkbox"/>								
2 (sensor 28)	<input type="text" value="Solar Voltage"/> Details>>	<input type="checkbox"/>								
3 (sensor 29)	<input type="text" value="Sensor 1"/> Details>>	<input type="checkbox"/>								
4 (sensor 30)	<input type="text" value="Sensor 2"/> Details>>	<input type="checkbox"/>								
5 (sensor 31)	<input type="text" value="Sensor 3"/> Details>>	<input type="checkbox"/>								
6 (sensor 32)	<input type="text" value="Sensor 4"/> Details>>	<input type="checkbox"/>								

To bind a DSCP device to the NetGuardian 16A, first clear the "Module Address High" and "Module Address Low" fields. After the configuration is saved and written to the 16A, it will actively be listening for new devices. Power up the DSCP device you wish to bind, and move it within range of the 16A. If applicable, press the "wireless reset" button on the DSCP device. After a few minutes, you should be able to refresh this page and see the module address automatically populated above.

Note: to apply changes to "Update Frequency" and "Sensor Power", unbind the 16A and press reset on the TrackMon.

10/7/2016, 8:23:40 AM
NetGuardian 16A v2.0Q.0001
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The Provisioning > DCSP menu

Module Configuration	
Module Address High	4-byte identification address that is automatically acquired when the Track Monitor DSCP device is sync'd with the NetGuardian. Note: This field must be cleared before a new DSCP device can sync with the NetGuardian.
Module Address Low	4-byte identification address that is automatically acquired when the Track Monitor DSCP device is sync'd with the NetGuardian. Note: This field must be cleared before a new DSCP device can sync with the

	NetGuardian.
Update Frequency	The rate with which the Track Monitor will report sensor data to the NetGuardian. Note: The Track Monitor spends a majority of the time in 'sleep mode' to conserve power. Update Frequency will determine the rate with which it will 'wake up' and report data to the NetGuardian. The lower the Update Frequency, the faster the battery will drain. Increasing the intervals between reports will increase the battery's longevity.
Type	Select 'Track Monitor' to enable the Track Monitor DSCP device. Note: When the Track Monitor is enabled, Sensors (Provisioning > Sensors) 27-32 will become disabled for use. Note: When the Track Monitor is enabled, reach-through access via Provisioning > Serial Ports is disabled.
Comm Fail Timeout	Click "Edit Timer" to jump to the Timers page. This will let you set the period of time the TrackMon must report to the NetGuardian before raising the "DSCP Comm Timeout" alarm.
Sensor Power	Select "Max Sensor Life" to prolong sensor lifespan at the cost of battery life. Select "Max Battery Life" to prolong battery life at the cost of sensor lifespan.
Point Configuration	
Pnt	Alarm point number.
Description	User-definable description for the discrete alarm point.
Reverse	Reverse: Check this box to reverse the polarity of the alarm point. Un-checked means the alarm is triggered when the Normally Open contact closure is latched. When polarity is reversed, a Normally Closed contact closure is clear and the alarm is triggered when this contact closure is released.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.
Analog Configuration (Details >>)	
Id	ID number for the analog channel.
Description	User-definable description for the analog channel.
Record Freq	The amount of time, in minutes (min) or seconds (s), between each log of each analog value to history.
Deadband	The amount (in volts) that the channel needs to go above or below a threshold in order to cause an alarm.
Units	User-definable display units. The most common are: VDC = Voltage F = Fahrenheit C = Celsius
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, such as 32°F.
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, such as 32°F.
Thresholds	These settings are set 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).

11.15 Ping Targets

The **Provisioning > Ping Targets** menu allows you to configure the Description, IP Address, and Notification Devices for each of your 32 ping targets.

Ping Targets												
Id	Enab	Description Display Map	Server (IP or Hostname)	1	2	3	4	5	6	7	8	
1	<input type="checkbox"/>	Cisco Router	126.102.218.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>	Ethernet Switch 1	126.102.218.24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/>	Ethernet Switch 2	126.102.218.12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/>	Ethernet Switch 2	126.102.218.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>	Router 2	126.102.218.67	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6	<input type="checkbox"/>	Media Converter	126.102.218.29	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7	<input type="checkbox"/>	Microwave Transmitter	126.102.218.90	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8	<input type="checkbox"/>	Cisco 15454	126.102.218.43	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9	<input type="checkbox"/>	Calix	126.102.218.31	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	<input type="checkbox"/>	Modem	126.102.218.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
11	<input type="checkbox"/>	PBX	126.102.218.15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
12	<input type="checkbox"/>	Proxy Server	126.102.218.39	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

The Provisioning > Ping Targets menu

Provisioning Ping Targets	
ID	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.

11.16 System Alarms

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

System Alarms											
Pnt	Description	Display Map	Silence	1	2	3	4	5	6	7	8
33	Default configuration		<input type="checkbox"/>								
34	DCP poller inactive		<input type="checkbox"/>								
39	SNMP community error		<input type="checkbox"/>								
41	Notification 1 failed		<input type="checkbox"/>								
42	Notification 2 failed		<input type="checkbox"/>								
43	Notification 3 failed		<input type="checkbox"/>								
44	Notification 4 failed		<input type="checkbox"/>								

The Provisioning > System Alarms menu

Editing System Alarms	
Pnt (Point)	The system alarm point number
Description	Non-editable description for this System (housekeeping) Alarm.
Silence	Check this box to choose to silence this alarm.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.

11.17 BAU Global Settings

BAU Global Settings	
BAU Settings	
<input checked="" type="checkbox"/> Enable BAU Mode	
Speaker Sound Control Id (0=Disabled) Enabling Speaker will disable any derived controls present at the Control ID	<input type="text" value="2"/>
Alarm Controlled Speaker (0=Disabled) Values 21-39 will reflect threshold alarms for User Analogs 1-18	<input type="text" value="13"/>
<input type="button" value="Save"/>	

Building Access Unit Mode (BAU):

In this mode of operation access to the site is granted by issuing an OPR command to Display 1 point 54 "Extended Propped Door Mode". If access to the facility has not been granted using this method and a door is opened, a door warning period will begin, followed by a door violation.

Clearing the Door Violation alarm:

- Sending an OPR command to Display 1, Point 54 from T/Mon will enter "Extended Propped Door Mode" and will suppress the speaker sounding under an alarm condition. The OPR command will also clear a "Door Violation" alarm status. To cancel this mode send a RLS command from T/Mon to Display 1, Point 54.
- Sending a MOM command to Display 1, Point 54 from T/Mon will clear a Door Violation Alarm Status

and reset the speaker progression.

BAU Mode Setup:

1. Check Enable BAU Mode in Provisioning→BAU Globals
2. Set the Provisioning→BAU Globals→Speaker Sound Control ID to the Control Id that is connected to the external speaker.
3. For the Control Id chosen as the Speaker Sound Control ID, set the Provisioning→Controls→Details→Derived Description to "_ORD1.1-N", where N is the max number of discrete alarms monitored/supported.

11.18 Timers

The **Timers** are user-definable, and allow you to choose the intervals between automatic refreshing of the unit's web browser interface. Enter the amount of time, in seconds (sec) or minutes (m), in the value field and click **Save**.

Timers	
Web Refresh (1s-60s): How often web browser is refreshed when in monitor mode.	1sec
Timed Tick (0s-60m, 0=off): This is a 'heartbeat' function that can be used by masters who don't perform integrity checks.	0sec
Sound on time (0s-10m): How long the NetGuardian's speaker will sound when reportable alarm occurs or clears.	5sec
Ping Cycle (30s-30m, 0=off): Time interval between each ping cycle (0 disables, 30 seconds minimum)	4min
DCP Poller Timeout (1m-30m, 0=off): DCP polls must be received within this time interval or the DCP poller inactive alarm will set.	5min
DSCP Timeout (1m-120m, 0=off) DSCP polls must be received within this time interval or the "DSCP Comm Failed" alarm will set.	15min
<input type="button" value="Save"/>	

The Provisioning > Timers menu

11.19 Date and Time

Date and Time

Unit Time

Date: Month Oct ▾ Day 8 ▾ Year 2012

Time: Hour 12 ▾ Minute 25 ▾ PM ▾

Automatic Time Adjustment (NTP)

Enable NTP

NTP Server Address or Host Name:

Time Zone: GMT-08:00 Pacific Time ▾

Adjust Clock for Daylight Saving Time (DST)

Enable DST

Start Day: Month Mar ▾ Weekday Second Sunday ▾ Hour 2 ▾ AM ▾

End Day: Month Nov ▾ Weekday First Sunday ▾ Hour 2 ▾ AM ▾

The Provisioning > Date and Time menu

Unit Time	
Date	Set today's date.
Time	Set the current time.
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: us.pool.ntp.org. Note: Make sure to configure DNS before using host name instead of IP address.
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 NetGuardian 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.

11.20 Modbus Devices

The NetGuardian supports up to 16 Modbus Devices connected over LAN. The **Provisioning > Modbus Devices** menu allows you to configure the Device Type, IP Address, TCP Port, and Modbus Address for your Modbus devices.

Modbus Devices

Modbus Interrogator Global Settings				
Modbus Poll Delay		<input type="text" value="1000"/>	ms (10 - 65000)	
Modbus Poll Timeout		<input type="text" value="5"/>	s (1 - 255)	
Device Settings				
Id	Device Type	Host Name or IP Display Map	TCP Port	Modbus Address
1	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
2	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
3	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
4	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
5	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
6	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
7	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
8	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
9	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
10	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
11	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
12	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
13	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
14	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
15	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>
16	None ▾	<input type="text"/>	<input type="text" value="502"/>	<input type="text" value="1"/>

The Provisioning > Modbus Devices menu

Provisioning Modbus Devices	
Modbus Poll Delay	Time delay (in milliseconds) between polling of devices.
Modbus Poll Timeout	Time (in seconds) to wait before device becomes "Not Detected."
Id	ID number for the modbus device
Device Type	The type of modbus device you are provisioning.
Host Name or IP	Host name or IP address of the modbus device you would like to poll.
TCP Port	The TCP Port on which to poll the modbus device.
Modbus Address	The unique identifier for the modbus device. This value must match what is configured on the modbus device.

11.21 Modbus Registers

The NetGuardian supports configuration of up to 64 Modbus Registers. The **Provisioning > Modbus Registers** menu allows you to configure the modbus registers to poll.

Modbus Registers

Save

Id	Modbus Device	Description	Display Map	1	2	3	4	5	6	7	8
1	Disabled ▾		Details<<	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recording Settings: Stable Frequency: 15min Change Frequency: 1min Record Hysteresis: 1		Register Attributes: Register Number: 0 Number of Bits: 16 Unsigned <input checked="" type="radio"/> Signed <input type="radio"/> Scaling: 1.00000 Units:		Thresholds: MjU: -79.00 MnU: -35.00 MnO: 35.00 MjO: 79.00 Deadband: 1							
2	Disabled ▾		Details>>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Disabled ▾		Details>>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Disabled ▾		Details>>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Disabled ▾		Details>>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Provisioning > Modbus Registers menu

Basic Modbus Register Configuration	
Id	Modbus Register ID number.
Modbus Device	The Modbus Device to assign to this modbus register.
Description	User-definable description for the modbus register.
Notification Devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that alarm point.
Advanced Modbus Register Configuration (Details>>)	
Stable Frequency	The amount of time, in minutes (min) or seconds (s), between each log of each register value to history
Change Frequency	The amount of time, in minutes (min) or seconds (s), between each log of each changing register value to history
Record Hysteresis	A numeric value that refers to the amount that a modbus register value needs to change in order to be logged as a "changed" value, rather than a "stable" value, in history.
Register Number	The modbus register number. See the modbus device register map for more information.
Number of Bits	The number of bits that the modbus register value will be.
Unsigned/Signed	Whether or not the modbus register value is signed or unsigned.
Scaling	The amount to multiply the register value on the NetGuardian when displaying the value.
Units	User-definable, 4-character free-form text to be appended to modbus register value for display on NetGuardian and in SNMP.
Thresholds	These settings are set 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).
Deadband	The amount (in volts) that the register needs to go above or below a threshold in

order to cause an alarm.

12 Monitoring via the Web Browser

12.1 Alarms

This selection 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. The status will be displayed in green when the alarm condition is not present.

Alarms		
Id	Description Display Map	State
1	Front Door	Clear
2	Side Door	Clear
3	Back Door	Clear
4	Tower Lights	Clear
5	Motion Sensor 1	Clear
6	Motion Sensor 2	Clear
7	Commercial Power	Clear
8	Media Converter	Clear
9	Router 1	Clear
10	Router 2	Clear
11	Modem	Clear
12	Rectifier	Clear
13	Microwave Transmitter	Clear
14	Switch 1	Clear
15	Switch 2	Clear
16	PBX	Clear

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

Basic Alarm Monitoring	
ID	Alarm ID number.
Description	User-definable description for the discrete alarm point.
State	The current state of the alarm. (Clear or Alarm)

12.2 Controls

Use the following rules to operate the NetGuardian's control:

1. Select **Controls** from the **Monitor** menu.
2. Under the **State** field, you can see the current condition of the control.
3. To issue the control, click on a command (**OPR** - operate, **RLS** - release, or **MOM** - momentary)

Controls

 Disable Control Confirmation

Id	Description Display Map	State	Command		
1	Front Door	Latched	OPR	RLS	MOM
2	Side Door	Released	OPR	RLS	MOM
3	Tower Lights	Released	OPR	RLS	MOM
4	Front Lights	Released	OPR	RLS	MOM

View and operate control relays from the Monitor > Controls menu

Control Relay Operation	
Disable Control Confirmation	Disable Control Confirmation pop-ups when operating controls.
ID	ID number for the control relay.
Description	Description for the NetGuardian's control relay defined in the Provisioning > Controls menu.
State	Status of the control relay. Can either be Released or Latched .
Command	OPR - Latch the relay. RLS - Release the relay. MOM - Momentarily latch the relay, then automatically release the relay. The duration of the latch is defined in the Provisioning > Controls menu.

12.3 Analogs

The **Monitor > Analogs** screen provides a description of each analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your temperature settings. If configured under **Provisioning > Analogs**, your analog values will be displayed as a graphical gauge. Selecting **Table View** will display a non-graphical interface of your values.

User Analogs ([Table View](#))

No.	3	0.00	79	No.	4	0.00	-79	-35	35	79
Enab	Yes			Enab	Yes					
Units	VDC			Units	VDC					
MjU				MjU						
MnU				MnU						
MnO				MnO						
MjO				MjO						

Battery Voltage

No.	5	0.00	-48	-52	No.	6	0.00	-48	-52
Enab	Yes				Enab	Yes			
Units	VDC				Units	VDC			
MjU	X				MjU	X			
MnU	X				MnU	X			
MnO					MnO				
MjO					MjO				

Power Input A

No.	6	0.00	-48	-52
Enab	Yes			
Units	VDC			
MjU	X			
MnU	X			
MnO				
MjO				

Power Input B

Click on **Analogs** in the **Monitor** menu to view the current channel readings.

12.4 Sensors

This selection provides the status of the system's analog channels by indicating if an alarm has been triggered. The **Monitor > Sensors** screen provides a description of each analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your temperature settings. If configured under **Provisioning > Sensors**, your analog values will be displayed as a graphical gauge. Selecting **Table View** will display a non-graphical interface of your values.

Sensors (Table View)

No.	5	<p>Analog Value</p> <p>78.34</p> <p>Air Temperature</p>
Enab	Yes	
Units	F	
MjU		
MnU		
MnO		
MjO		
No.	2	<p>77.44</p> <p>Temperature</p>
Enab	Yes	
Units	F	
MjU		
MnU		
MnO	X	
MjO		
No.	3	<p>77.44</p> <p>Internal Temperature</p>
Enab	Yes	
Units	F	
MjU		
MnU		
MnO		
MjO		
No.	4	<p>78.45</p> <p>External Temperature</p>
Enab	Yes	
Units	F	
MjU		
MnU		
MnO		
MjO		

The Monitor > Sensors menu

12.5 DSCP

The **Monitor > DSCP** screen provides a description of each DSCP device alarm point state and each DSCP device analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your analog settings.

DSCP (Wireless)			
Pnt	Description	Display Map	State
46	Sensor Power Fault		Clear
47	Sensor Power Low		Clear
48	XBEE Fault		Clear
49	Sensor 1 Fault		Alarm
50	Sensor 2 Fault		Clear
51	Sensor 3 Fault		Clear
52	Sensor 4 Fault		Clear
54	DSCP Comm Failed		Alarm

Id	Description	Display Map	Thresholds	Reading
1	Battery Voltage		Major Under	6.75 VDC
2	Solar Voltage		Major Under	8.53 VDC
3	Temperature Sensor 1		Major Under	5.05 VDC
4	Temperature Sensor 2		Major Under	0.00 VDC
5	Temperature Sensor 3		Major Under	7.42 VDC
6	Temperature Sensor 4		Major Under	5.54 VDC

Click on **DSCP** in the Monitor menu to view the current DSCP device statuses.

Alarm Points	
Sensor Power Fault	Sensor Power Current Limit, Under-Voltage, or Over-Temperature.
Sensor Power Low	Sensor Power less than 90% of nominal.
XBEE Fault	Local XBEE Radio is not responding to commands.
Sensor 1 Fault	Sensor 1 is reporting an error or is unplugged.
Sensor 2 Fault	Sensor 2 is reporting an error or is unplugged.
Sensor 3 Fault	Sensor 3 is reporting an error or is unplugged.
Sensor 4 Fault	Sensor 4 is reporting an error or is unplugged.
DSCP Comm Failed	Far end device has not reported since "DSCP Timeout" has passed. (Time configured in "Timers")

12.6 Ping Targets

Ping Targets can be viewed by going to **Monitor > Ping Targets**. Here you can view the state (either **Clear** or **Alarm**) for each of your configured Ping Targets. Up to 32 ping targets may be configured.

Ping Targets		
Id	Description Display Map	State
1	Cisco Router	Clear
2	Ethernet Switch 1	Clear
3	Ethernet Switch 2	Clear
4	Ethernet Switch 2	Clear
5	Router 2	Clear
6	Media Converter	Clear
7	Microwave Transmitter	Clear
8	Cisco 15454	Clear
9	Calix	Clear
10	Modem	Clear
11	PBX	Clear
12	Proxy Server	Clear

View the status of Ping Targets from the Monitor > Ping Targets menu.

12.7 System Alarms

System alarms are not-editable, housekeeping alarms that are programmed into NetGuardian. The **Monitor > System 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. 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.

System Alarms		
Pnt	Description Display Map	State
33	Default configuration	Clear
34	DCP poller inactive	Clear
39	SNMP community error	Clear
41	Notification 1 failed	Clear
42	Notification 2 failed	Alarm
43	Notification 3 failed	Clear
44	Notification 4 failed	Clear

View the status of System Alarms from the Monitor > System Alarms menu.

12.8 BAU Alarms

BAU alarms are not editable and are only used when BAU Mode is enabled.

BAU Alarms		
Id	Description Display Map	State
44	Door Violation Alarm	Alarm
54	Stay-Open Door Mode Active	Clear

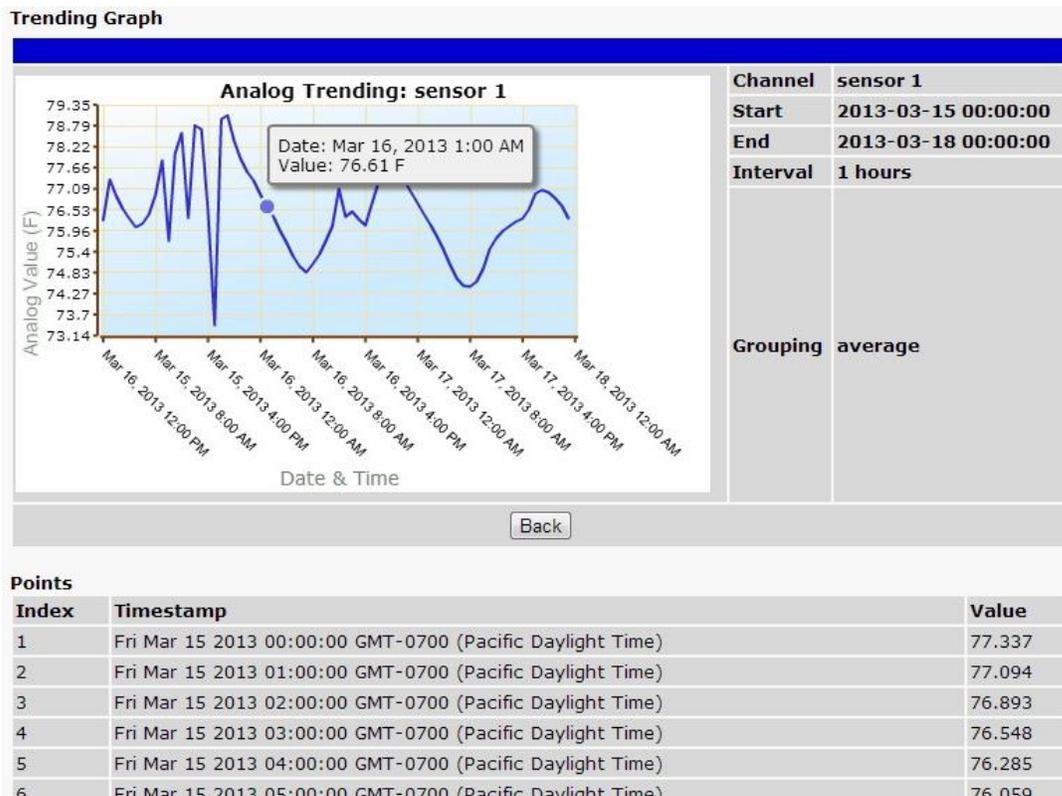
12.9 Graph

The Graph section of the monitor menu lets you build a graph of past sensor measurements, which gives you a visual indication of data over time and points out trending values. To create your Graph, specify the Channel (Analog 1-18, Sensors 1-32, or Modbus Registers 1-64), Group Interval (1-120 minutes, hours, days, or weeks), the Group Function (Average, Min, Max), and Start & End Times. Once you have entered all of the desired values, click "Build Graph."

Graph Parameters																																																			
Channel	analog 1	Analogs (a1-a18), Sensors (s1-s32), Modbus Registers (r1-r64)																																																	
Group Interval	1 weeks	1-120 minute(m)/hour(h)/day(d)/week(w)																																																	
Group Function	Average																																																		
Start Time	<div style="border: 1px solid gray; padding: 5px;"> February, 2016 <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> </thead> <tbody> <tr> <td>31</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr> <td>7</td><td>8</td><td>9</td><td style="background-color: yellow;">10</td><td>11</td><td>12</td><td>13</td></tr> <tr> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr> <td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr> <td>28</td><td>29</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr> <td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> </tbody> </table> Today: Feb 10, 2016 2016-02-10 00:00:00 </div>	S	M	T	W	T	F	S	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	1	2	3	4	5	6	7	8	9	10	11	12	Time: 00:00:00
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21	22	23	24	25	26	27																																													
28	29	1	2	3	4	5																																													
6	7	8	9	10	11	12																																													
End Time	<div style="border: 1px solid gray; padding: 5px;"> February, 2016 <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> </thead> <tbody> <tr> <td>31</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr> <td>7</td><td>8</td><td>9</td><td style="background-color: yellow;">10</td><td>11</td><td>12</td><td>13</td></tr> <tr> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr> <td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr> <td>28</td><td>29</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr> <td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> </tbody> </table> Today: Feb 10, 2016 2016-02-10 23:45:00 </div>	S	M	T	W	T	F	S	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	1	2	3	4	5	6	7	8	9	10	11	12	Time: 23:45:00
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21	22	23	24	25	26	27																																													
28	29	1	2	3	4	5																																													
6	7	8	9	10	11	12																																													
Build Graph																																																			

Provision the Channels, Group Interval, Group Function and more - all from the Graph Parameters section of the web browser interface.

Your graph will appear on the next screen. This graph is Adobe Flash-based and allows you to mouse over the lines to quickly view measurements (date, time, and value) within their context of the overall graphing trend. Below the graph is a full textual list of all indexed points with their dates and values.



Specify your parameter values and build an interactive graph based on the alarm point history.

12.10 Modbus Registers

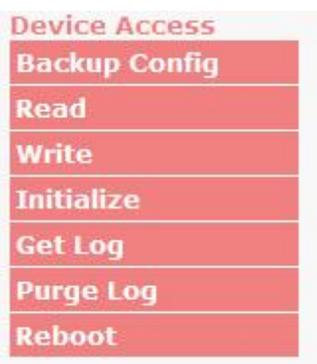
The **Monitor > Modbus Registers** screen provides a description of each modbus register, the alarm conditions (major under, minor under, major over, minor over, none) according to your threshold settings, and the current reading. The Thresholds field will show "Disabled" if the Modbus Register is disabled, or "Not Detected" if the Modbus Register is enabled but cannot be detected by the NetGuardian.

Modbus Registers			
Id	Description Display Map	Thresholds	Reading
1	GEN 1 ENGINE STATE	0-Stopped, Key	None
2	GEN 1 DIESEL FUEL	0 %	Major Under
3	GEN 1 START BATTERY	24.16 V	None
4	GEN 1 ENGINE TOTAL RUNTIME	4 Hrs	None
5	GEN 1 COOLANT TEMP	378 F	Major Over
6	GEN 1 OIL PRESSURE	0 PSI	None
7	GEN 1 OUTPUT FREQUENCY	0.00 Hz	None
8	GEN 1 OVERALL CURRENT	0 A	None

The Monitor > Modbus Registers menu

13 Device Access Descriptions

The **Device Access** options, listed in pink on the left side of the web interface, provide options for generating reports, updating the NetGuardian's firmware, and rebooting the unit. Click any of the options under **Device Access** to perform the desired action.



The control menu is located in the bottom left of the web interface

Device Access Option	Description
Backup Config	Backs up the units configuration settings
Read	Reads a configuration file from the unit
Write	Commits all changes made in the web interface to the NetGuardian's non-volatile memory
Initialize	Sets the unit's configuration to factory default values
Get Log	Opens the NetGuardian's event log in Notepad (or another plain text editor).
Purge Log	Deletes the NetGuardian's event log history.
Reboot	Reboots the NetGuardian.

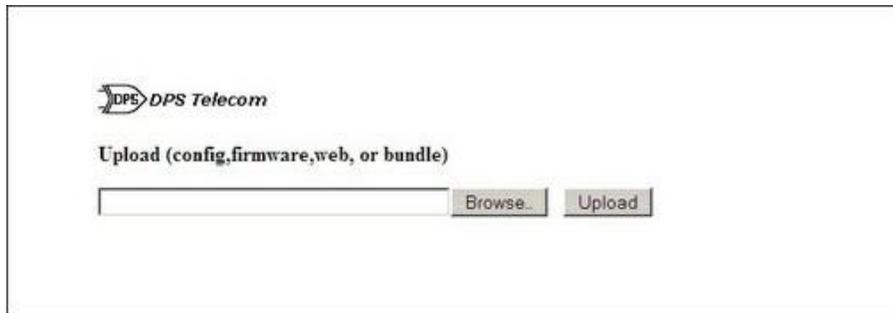
14 Firmware Upgrade

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



To upload firmware, click on **Upload** on the top right corner of the web interface

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



Browse for downloaded firmware upgrade

15 Reference Section

15.1 Front and Back Panel LEDs

LED	Status	Description
Status	Blinking Green	NetGuardian application running
	Blinking Red	Boot Loader is running
Wireless	Flashing Green	Data transmit to wireless module
	Flashing Red	Data received from wireless module
LAN	Blinking Green	LAN activity
Alarms	Flashing Red	New alarm
	Solid Red	Standing alarm acknowledged
Analogs	Solid Red	Exceeding 16 channel analog or power thresholds
Relays	Solid Green	1 or more control relays latched
Craft	Flashing Green	NG 16A data transmit over craft port
	Flashing Red	NG 16A data receive over craft port

Front Panel LED Descriptions

LED	Status	Description
A	Solid Green	Power supply A OK
	Off	No voltage or +24V and GND leads reversed on Power supply A
B	Solid Green	Power supply B OK
	Off	No voltage or +24V and GND leads reversed on Power supply B
FA	Solid Red	Blown Fuse
LNK	Solid Green	LAN connected
LAN	Blinking Yellow	LAN Activity
100BT	Solid Green	LAN connection speed is 100BaseT
	Off	LAN connection speed is 10BaseT

Back Panel LED Descriptions

15.2 Display Mapping

	Description	Port	Address	Point
Display 1	Discrete Alarms	99	1	1-20
	Control Relays	99	1	33-40
	Reserved	99	1	41-43
	Door Violation	99	1	44
	Reserved	99	1	45-53
	Stay-open Door Mode Active	99	1	54
	Reserved	99	1	55-64
Display 2	Ping Targets	99	1	1-16
	System Alarms	99	1	33-45
	System Alarms	99	1	55-64
	DSCP Sensor Power Fault	99	1	46
	DSCP Sensor Power Low	99	1	47
	DSCP Unused	99	1	48-53
	DSCP Comm Failed	99	1	54
Display 3	Analog 1 Minor Under, Minor Over	99	1	1, 2
	Analog 1 Major Under, Major Over	99	1	3, 4
	Analog 1 Range	99	1	9-11
	Analog 1 Polarity	99	1	13
	Analog 1 Value*	99	1	17-32
	Analog 2 Minor Under, Minor Over	99	1	33, 34
	Analog 2 Major Under, Major Over	99	1	35, 36
	Analog 2 Range	99	1	41-43
	Analog 2 Polarity	99	1	45
Analog 2 Value*	99	1	49-64	
Display 4	Analog 3 Minor Under, Minor Over	99	1	1, 2
	Analog 3 Major Under, Major Over	99	1	3, 4
	Analog 3 Range	99	1	9-11
	Analog 3 Polarity	99	1	13
	Analog 3 Value*	99	1	17-32
	Analog 4 Minor Under, Minor Over	99	1	33, 34
	Analog 4 Major Under, Major Over	99	1	35, 36
	Analog 4 Range	99	1	41-43
	Analog 4 Polarity	99	1	45
Analog 4 Value*	99	1	49-64	
Display 5	Analog 5 Minor Under, Minor Over	99	1	1, 2
	Analog 5 Major Under, Major Over	99	1	3, 4
	Analog 5 Range	99	1	9-11
	Analog 5 Polarity	99	1	13
	Analog 5 Value*	99	1	17-32
	Analog 6 Minor Under, Minor Over	99	1	33, 34
	Analog 6 Major Under, Major Over	99	1	35, 36
	Analog 6 Range	99	1	41-43
	Analog 6 Polarity	99	1	45
Analog 6 Value*	99	1	49-64	
Display 6	Analog 7 Minor Under, Minor Over	99	1	1, 2
	Analog 7 Major Under, Major Over	99	1	3, 4
	Analog 7 Range	99	1	9-11
	Analog 7 Polarity	99	1	13
	Analog 7 Value*	99	1	17-32
	Analog 8 Minor Under, Minor Over	99	1	33, 34
	Analog 8 Major Under, Major Over	99	1	35, 36
	Analog 8 Range	99	1	41-43
	Analog 8 Polarity	99	1	45
Analog 8 Value*	99	1	49-64	
Display 7	Analog 9 Minor Under, Minor Over	99	1	1, 2
	Analog 9 Major Under, Major Over	99	1	3, 4
	Analog 9 Range	99	1	9-11

	Analog 9 Polarity	99	1	13
	Analog 9 Value*	99	1	17-32
	Analog 10 Minor Under, Minor Over	99	1	33, 34
	Analog 10 Major Under, Major Over	99	1	35, 36
	Analog 10 Range	99	1	41-43
	Analog 10 Polarity	99	1	45
	Analog 10 Value*	99	1	49-64

**Note: "Analog Value*" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.*

Display	Description	Port	Address	Point
Display 8	Analog 11 Minor Under, Minor Over	99	1	1, 2
	Analog 11 Major Under, Major Over	99	1	3, 4
	Analog 11 Range	99	1	9-11
	Analog 11 Polarity	99	1	13
	Analog 11 Value*	99	1	17-32
	Analog 12 Minor Under, Minor Over	99	1	33, 34
	Analog 12 Major Under, Major Over	99	1	35, 36
	Analog 12 Range	99	1	41-43
	Analog 12 Polarity	99	1	45
Analog 12 Value*	99	1	49-64	
Display 9	Analog 13 Minor Under, Minor Over	99	1	1, 2
	Analog 13 Major Under, Major Over	99	1	3, 4
	Analog 13 Range	99	1	9-11
	Analog 13 Polarity	99	1	13
	Analog 13 Value*	99	1	17-32
	Analog 14 Minor Under, Minor Over	99	1	33, 34
	Analog 14 Major Under, Major Over	99	1	35, 36
	Analog 14 Range	99	1	41-43
	Analog 14 Polarity	99	1	45
Analog 14 Value*	99	1	49-64	
Display 10	Analog 15 Minor Under, Minor Over	99	1	1, 2
	Analog 15 Major Under, Major Over	99	1	3, 4
	Analog 15 Range	99	1	9-11
	Analog 15 Polarity	99	1	13
	Analog 15 Value*	99	1	17-32
	Analog 16 Minor Under, Minor Over	99	1	33, 34
	Analog 16 Major Under, Major Over	99	1	35, 36
	Analog 16 Range	99	1	41-43
	Analog 16 Polarity	99	1	45
Analog 16 Value*	99	1	49-64	
Display 11	Power A Minor Under, Minor Over	99	1	1, 2
	Power A Major Under, Major Over	99	1	3, 4
	Power A Range	99	1	9-11
	Power A Polarity	99	1	13
	Power A Value*	99	1	17-32
	Power B Minor Under, Minor Over	99	1	33, 34
	Power B Major Under, Major Over	99	1	35, 36
	Power B Range	99	1	41-43
	Power B Polarity	99	1	45
Power B Value*	99	1	49-64	
Display12	Digital Temp Sensor 1 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 1 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 1 - Sensor not Detected	99	1	5
	Digital Temp Sensor 1 Range	99	1	9-11
	Digital Temp Sensor 1 Polarity	99	1	13
	Digital Temp Sensor 1 Value*	99	1	17-32
	Digital Temp Sensor 2 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 2 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 2 - Sensor not Detected	99	1	37
	Digital Temp Sensor 2 Range	99	1	41-43
	Digital Temp Sensor 2 Polarity	99	1	45
Digital Temp Sensor 2 Value*	99	1	49-64	

Note: "Analog Value", Power Value, and Digital Temp Sensor Value** must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 13	Digital Temp Sensor 3 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 3 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 3 - Sensor not Detected	99	1	5
	Digital Temp Sensor 3 Range	99	1	9-11
	Digital Temp Sensor 3 Polarity	99	1	13
	Digital Temp Sensor 3 Value*	99	1	17-32
	Digital Temp Sensor 4 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 4 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 4 - Sensor not Detected	99	1	37
	Digital Temp Sensor 4 Range	99	1	41-43
	Digital Temp Sensor 4 Polarity	99	1	45
Digital Temp Sensor 4 Value*	99	1	49-64	
Display14	Digital Temp Sensor 5 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 5 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 5 - Sensor not Detected	99	1	5
	Digital Temp Sensor 5 Range	99	1	9-11
	Digital Temp Sensor 5 Polarity	99	1	13
	Digital Temp Sensor 5 Value*	99	1	17-32
	Digital Temp Sensor 6 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 6 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 6 - Sensor not Detected	99	1	37
	Digital Temp Sensor 6 Range	99	1	41-43
	Digital Temp Sensor 6 Polarity	99	1	45
Digital Temp Sensor 6 Value*	99	1	49-64	
Display 15	Digital Temp Sensor 7 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 7 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 7 - Sensor not Detected	99	1	5
	Digital Temp Sensor 7 Range	99	1	9-11
	Digital Temp Sensor 7 Polarity	99	1	13
	Digital Temp Sensor 7 Value*	99	1	17-32
	Digital Temp Sensor 8 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 8 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 8 - Sensor not Detected	99	1	37
	Digital Temp Sensor 8 Range	99	1	41-43
	Digital Temp Sensor 8 Polarity	99	1	45
Digital Temp Sensor 8 Value*	99	1	49-64	
Display 16	Digital Temp Sensor 9 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 9 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 9 - Sensor not Detected	99	1	5
	Digital Temp Sensor 9 Range	99	1	9-11
	Digital Temp Sensor 9 Polarity	99	1	13
	Digital Temp Sensor 9 Value*	99	1	17-32
	Digital Temp Sensor 10 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 10 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 10 - Sensor not Detected	99	1	37
	Digital Temp Sensor 10 Range	99	1	41-43
	Digital Temp Sensor 10 Polarity	99	1	45
Digital Temp Sensor 10 Value*	99	1	49-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 17	Digital Temp Sensor 11 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 11 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 11 - Sensor not Detected	99	1	5
	Digital Temp Sensor 11 Range	99	1	9-11
	Digital Temp Sensor 11 Polarity	99	1	13
	Digital Temp Sensor 11 Value*	99	1	17-32
	Digital Temp Sensor 12 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 12 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 12 - Sensor not Detected	99	1	37
	Digital Temp Sensor 12 Range	99	1	41-43
	Digital Temp Sensor 12 Polarity	99	1	45
Digital Temp Sensor 12 Value*	99	1	49-64	
Display 18	Digital Temp Sensor 13 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 13 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 13 - Sensor not Detected	99	1	5
	Digital Temp Sensor 13 Range	99	1	9-11
	Digital Temp Sensor 13 Polarity	99	1	13
	Digital Temp Sensor 13 Value*	99	1	17-32
	Digital Temp Sensor 14 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 14 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 14 - Sensor not Detected	99	1	37
	Digital Temp Sensor 14 Range	99	1	41-43
	Digital Temp Sensor 14 Polarity	99	1	45
Digital Temp Sensor 14 Value*	99	1	49-64	
Display 19	Digital Temp Sensor 15 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 15 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 15 - Sensor not Detected	99	1	5
	Digital Temp Sensor 15 Range	99	1	9-11
	Digital Temp Sensor 15 Polarity	99	1	13
	Digital Temp Sensor 15 Value*	99	1	17-32
	Digital Temp Sensor 16 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 16 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 16 - Sensor not Detected	99	1	37
	Digital Temp Sensor 16 Range	99	1	41-43
	Digital Temp Sensor 16 Polarity	99	1	45
Digital Temp Sensor 16 Value*	99	1	49-64	
Display 20	Digital Temp Sensor 17 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 17 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 17 - Sensor not Detected	99	1	5
	Digital Temp Sensor 17 Range	99	1	9-11
	Digital Temp Sensor 17 Polarity	99	1	13
	Digital Temp Sensor 17 Value*	99	1	17-32
	Digital Temp Sensor 18 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 18 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 18 - Sensor not Detected	99	1	37
	Digital Temp Sensor 18 Range	99	1	41-43
	Digital Temp Sensor 18 Polarity	99	1	45
Digital Temp Sensor 18 Value*	99	1	49-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 21	Digital Temp Sensor 19 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 19 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 19 - Sensor not Detected	99	1	5
	Digital Temp Sensor 19 Range	99	1	9-11
	Digital Temp Sensor 19 Polarity	99	1	13
	Digital Temp Sensor 19 Value*	99	1	17-32
	Digital Temp Sensor 20 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 20 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 20 - Sensor not Detected	99	1	37
	Digital Temp Sensor 20 Range	99	1	41-43
	Digital Temp Sensor 20 Polarity	99	1	45
Digital Temp Sensor 20 Value*	99	1	49-64	
Display 22	Digital Temp Sensor 21 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 21 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 21 - Sensor not Detected	99	1	5
	Digital Temp Sensor 21 Range	99	1	9-11
	Digital Temp Sensor 21 Polarity	99	1	13
	Digital Temp Sensor 21 Value*	99	1	17-32
	Digital Temp Sensor 22 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 22 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 22 - Sensor not Detected	99	1	37
	Digital Temp Sensor 22 Range	99	1	41-43
	Digital Temp Sensor 22 Polarity	99	1	45
Digital Temp Sensor 22 Value*	99	1	49-64	
Display 23	Digital Temp Sensor 23 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 23 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 23 - Sensor not Detected	99	1	5
	Digital Temp Sensor 23 Range	99	1	9-11
	Digital Temp Sensor 23 Polarity	99	1	13
	Digital Temp Sensor 23 Value*	99	1	17-32
	Digital Temp Sensor 24 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 24 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 24 - Sensor not Detected	99	1	37
	Digital Temp Sensor 24 Range	99	1	41-43
	Digital Temp Sensor 24 Polarity	99	1	45
Digital Temp Sensor 24 Value*	99	1	49-64	
Display 24	Digital Temp Sensor 25 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 25 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 25 - Sensor not Detected	99	1	5
	Digital Temp Sensor 25 Range	99	1	9-11
	Digital Temp Sensor 25 Polarity	99	1	13
	Digital Temp Sensor 25 Value*	99	1	17-32
	Digital Temp Sensor 26 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 26 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 26 - Sensor not Detected	99	1	37
	Digital Temp Sensor 26 Range	99	1	41-43
	Digital Temp Sensor 26 Polarity	99	1	45
Digital Temp Sensor 26 Value*	99	1	49-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 25	Digital Temp Sensor 27 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 27 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 27 - Sensor not Detected	99	1	5
	Digital Temp Sensor 27 Range	99	1	9-11
	Digital Temp Sensor 27 Polarity	99	1	13
	Digital Temp Sensor 27 Value*	99	1	17-32
	Digital Temp Sensor 28 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 28 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 28 - Sensor not Detected	99	1	37
	Digital Temp Sensor 28 Range	99	1	41-43
	Digital Temp Sensor 28 Polarity	99	1	45
Digital Temp Sensor 28 Value*	99	1	49-64	
Display 26	Digital Temp Sensor 29 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 29 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 29 - Sensor not Detected	99	1	5
	Digital Temp Sensor 29 Range	99	1	9-11
	Digital Temp Sensor 29 Polarity	99	1	13
	Digital Temp Sensor 29 Value*	99	1	17-32
	Digital Temp Sensor 30 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 30 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 30 - Sensor not Detected	99	1	37
	Digital Temp Sensor 30 Range	99	1	41-43
	Digital Temp Sensor 30 Polarity	99	1	45
Digital Temp Sensor 30 Value*	99	1	49-64	
Display 27	Digital Temp Sensor 31 Minor Under, Minor Over	99	1	1, 2
	Digital Temp Sensor 31 Major Under, Major Over	99	1	3, 4
	Digital Temp Sensor 31 - Sensor not Detected	99	1	5
	Digital Temp Sensor 31 Range	99	1	9-11
	Digital Temp Sensor 31 Polarity	99	1	13
	Digital Temp Sensor 31 Value*	99	1	17-32
	Digital Temp Sensor 32 Minor Under, Minor Over	99	1	33, 34
	Digital Temp Sensor 32 Major Under, Major Over	99	1	35, 36
	Digital Temp Sensor 32 - Sensor not Detected	99	1	37
	Digital Temp Sensor 32 Range	99	1	41-43
	Digital Temp Sensor 32 Polarity	99	1	45
Digital Temp Sensor 32 Value*	99	1	49-64	
Display 28	Modbus register 1 Minor Under	99	1	1
	Modbus register 1 Minor Over	99	1	2
	Modbus register 1 Major Under	99	1	3
	Modbus register 1 Major Over	99	1	4
	Modbus register 1 Not detected	99	1	5
	Modbus register 1 Value	99	1	9-32
	Modbus register 2 Minor Under	99	1	33
	Modbus register 2 Minor Over	99	1	34
	Modbus register 2 Major Under	99	1	35
	Modbus register 2 Major Over	99	1	36
	Modbus register 2 Not detected	99	1	37
Modbus register 2 Value	99	1	41-64	

Display	Description	Port	Address	Point
Display 29	Modbus register 3 Minor Under	99	1	1
	Modbus register 3 Minor Over	99	1	2
	Modbus register 3 Major Under	99	1	3
	Modbus register 3 Major Over	99	1	4
	Modbus register 3 Not detected	99	1	5
	Modbus register 3 Value	99	1	9-32
	Modbus register 4 Minor Under	99	1	33
	Modbus register 4 Minor Over	99	1	34
	Modbus register 4 Major Under	99	1	35
	Modbus register 4 Major Over	99	1	36
	Modbus register 4 Not detected	99	1	37
Modbus register 4 Value	99	1	41-64	
Display 30	Modbus register 5 Minor Under	99	1	1
	Modbus register 5 Minor Over	99	1	2
	Modbus register 5 Major Under	99	1	3
	Modbus register 5 Major Over	99	1	4
	Modbus register 5 Not detected	99	1	5
	Modbus register 5 Value	99	1	9-32
	Modbus register 6 Minor Under	99	1	33
	Modbus register 6 Minor Over	99	1	34
	Modbus register 6 Major Under	99	1	35
	Modbus register 6 Major Over	99	1	36
	Modbus register 6 Not detected	99	1	37
Modbus register 6 Value	99	1	41-64	
Display 31	Modbus register 7 Minor Under	99	1	1
	Modbus register 7 Minor Over	99	1	2
	Modbus register 7 Major Under	99	1	3
	Modbus register 7 Major Over	99	1	4
	Modbus register 7 Not detected	99	1	5
	Modbus register 7 Value	99	1	9-32
	Modbus register 8 Minor Under	99	1	33
	Modbus register 8 Minor Over	99	1	34
	Modbus register 8 Major Under	99	1	35
	Modbus register 8 Major Over	99	1	36
	Modbus register 8 Not detected	99	1	37
Modbus register 8 Value	99	1	41-64	
Display 32	Modbus register 9 Minor Under	99	1	1
	Modbus register 9 Minor Over	99	1	2
	Modbus register 9 Major Under	99	1	3
	Modbus register 9 Major Over	99	1	4
	Modbus register 9 Not detected	99	1	5
	Modbus register 9 Value	99	1	9-32
	Modbus register 10 Minor Under	99	1	33
	Modbus register 10 Minor Over	99	1	34
	Modbus register 10 Major Under	99	1	35
	Modbus register 10 Major Over	99	1	36
	Modbus register 10 Not detected	99	1	37
Modbus register 10 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 33	Modbus register 11 Minor Under	99	1	1
	Modbus register 11 Minor Over	99	1	2
	Modbus register 11 Major Under	99	1	3
	Modbus register 11 Major Over	99	1	4
	Modbus register 11 Not detected	99	1	5
	Modbus register 11 Value	99	1	9-32
	Modbus register 12 Minor Under	99	1	33
	Modbus register 12 Minor Over	99	1	34
	Modbus register 12 Major Under	99	1	35
	Modbus register 12 Major Over	99	1	36
	Modbus register 12 Not detected	99	1	37
Modbus register 12 Value	99	1	41-64	
Display 34	Modbus register 13 Minor Under	99	1	1
	Modbus register 13 Minor Over	99	1	2
	Modbus register 13 Major Under	99	1	3
	Modbus register 13 Major Over	99	1	4
	Modbus register 13 Not detected	99	1	5
	Modbus register 13 Value	99	1	9-32
	Modbus register 14 Minor Under	99	1	33
	Modbus register 14 Minor Over	99	1	34
	Modbus register 14 Major Under	99	1	35
	Modbus register 14 Major Over	99	1	36
	Modbus register 14 Not detected	99	1	37
Modbus register 14 Value	99	1	41-64	
Display 35	Modbus register 15 Minor Under	99	1	1
	Modbus register 15 Minor Over	99	1	2
	Modbus register 15 Major Under	99	1	3
	Modbus register 15 Major Over	99	1	4
	Modbus register 15 Not detected	99	1	5
	Modbus register 15 Value	99	1	9-32
	Modbus register 16 Minor Under	99	1	33
	Modbus register 16 Minor Over	99	1	34
	Modbus register 16 Major Under	99	1	35
	Modbus register 16 Major Over	99	1	36
	Modbus register 16 Not detected	99	1	37
Modbus register 16 Value	99	1	41-64	
Display 36	Modbus register 17 Minor Under	99	1	1
	Modbus register 17 Minor Over	99	1	2
	Modbus register 17 Major Under	99	1	3
	Modbus register 17 Major Over	99	1	4
	Modbus register 17 Not detected	99	1	5
	Modbus register 17 Value	99	1	9-32
	Modbus register 18 Minor Under	99	1	33
	Modbus register 18 Minor Over	99	1	34
	Modbus register 18 Major Under	99	1	35
	Modbus register 18 Major Over	99	1	36
	Modbus register 18 Not detected	99	1	37
Modbus register 18 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 37	Modbus register 19 Minor Under	99	1	1
	Modbus register 19 Minor Over	99	1	2
	Modbus register 19 Major Under	99	1	3
	Modbus register 19 Major Over	99	1	4
	Modbus register 19 Not detected	99	1	5
	Modbus register 19 Value	99	1	9-32
	Modbus register 20 Minor Under	99	1	33
	Modbus register 20 Minor Over	99	1	34
	Modbus register 20 Major Under	99	1	35
	Modbus register 20 Major Over	99	1	36
	Modbus register 20 Not detected	99	1	37
Modbus register 20 Value	99	1	41-64	
Display 38	Modbus register 21 Minor Under	99	1	1
	Modbus register 21 Minor Over	99	1	2
	Modbus register 21 Major Under	99	1	3
	Modbus register 21 Major Over	99	1	4
	Modbus register 21 Not detected	99	1	5
	Modbus register 21 Value	99	1	9-32
	Modbus register 22 Minor Under	99	1	33
	Modbus register 22 Minor Over	99	1	34
	Modbus register 22 Major Under	99	1	35
	Modbus register 22 Major Over	99	1	36
	Modbus register 22 Not detected	99	1	37
Modbus register 22 Value	99	1	41-64	
Display 39	Modbus register 23 Minor Under	99	1	1
	Modbus register 23 Minor Over	99	1	2
	Modbus register 23 Major Under	99	1	3
	Modbus register 23 Major Over	99	1	4
	Modbus register 23 Not detected	99	1	5
	Modbus register 23 Value	99	1	9-32
	Modbus register 24 Minor Under	99	1	33
	Modbus register 24 Minor Over	99	1	34
	Modbus register 24 Major Under	99	1	35
	Modbus register 24 Major Over	99	1	36
	Modbus register 24 Not detected	99	1	37
Modbus register 24 Value	99	1	41-64	
Display 40	Modbus register 25 Minor Under	99	1	1
	Modbus register 25 Minor Over	99	1	2
	Modbus register 25 Major Under	99	1	3
	Modbus register 25 Major Over	99	1	4
	Modbus register 25 Not detected	99	1	5
	Modbus register 25 Value	99	1	9-32
	Modbus register 26 Minor Under	99	1	33
	Modbus register 26 Minor Over	99	1	34
	Modbus register 26 Major Under	99	1	35
	Modbus register 26 Major Over	99	1	36
	Modbus register 26 Not detected	99	1	37
Modbus register 26 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 41	Modbus register 27 Minor Under	99	1	1
	Modbus register 27 Minor Over	99	1	2
	Modbus register 27 Major Under	99	1	3
	Modbus register 27 Major Over	99	1	4
	Modbus register 27 Not detected	99	1	5
	Modbus register 27 Value	99	1	9-32
	Modbus register 28 Minor Under	99	1	33
	Modbus register 28 Minor Over	99	1	34
	Modbus register 28 Major Under	99	1	35
	Modbus register 28 Major Over	99	1	36
	Modbus register 28 Not detected	99	1	37
Modbus register 28 Value	99	1	41-64	
Display 42	Modbus register 29 Minor Under	99	1	1
	Modbus register 29 Minor Over	99	1	2
	Modbus register 29 Major Under	99	1	3
	Modbus register 29 Major Over	99	1	4
	Modbus register 29 Not detected	99	1	5
	Modbus register 29 Value	99	1	9-32
	Modbus register 30 Minor Under	99	1	33
	Modbus register 30 Minor Over	99	1	34
	Modbus register 30 Major Under	99	1	35
	Modbus register 30 Major Over	99	1	36
	Modbus register 30 Not detected	99	1	37
Modbus register 30 Value	99	1	41-64	
Display 43	Modbus register 31 Minor Under	99	1	1
	Modbus register 31 Minor Over	99	1	2
	Modbus register 31 Major Under	99	1	3
	Modbus register 31 Major Over	99	1	4
	Modbus register 31 Not detected	99	1	5
	Modbus register 31 Value	99	1	9-32
	Modbus register 32 Minor Under	99	1	33
	Modbus register 32 Minor Over	99	1	34
	Modbus register 32 Major Under	99	1	35
	Modbus register 32 Major Over	99	1	36
	Modbus register 32 Not detected	99	1	37
Modbus register 32 Value	99	1	41-64	
Display 44	Modbus register 33 Minor Under	99	1	1
	Modbus register 33 Minor Over	99	1	2
	Modbus register 33 Major Under	99	1	3
	Modbus register 33 Major Over	99	1	4
	Modbus register 33 Not detected	99	1	5
	Modbus register 33 Value	99	1	9-32
	Modbus register 34 Minor Under	99	1	33
	Modbus register 34 Minor Over	99	1	34
	Modbus register 34 Major Under	99	1	35
	Modbus register 34 Major Over	99	1	36
	Modbus register 34 Not detected	99	1	37
Modbus register 34 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 45	Modbus register 35 Minor Under	99	1	1
	Modbus register 35 Minor Over	99	1	2
	Modbus register 35 Major Under	99	1	3
	Modbus register 35 Major Over	99	1	4
	Modbus register 35 Not detected	99	1	5
	Modbus register 35 Value	99	1	9-32
	Modbus register 36 Minor Under	99	1	33
	Modbus register 36 Minor Over	99	1	34
	Modbus register 36 Major Under	99	1	35
	Modbus register 36 Major Over	99	1	36
	Modbus register 36 Not detected	99	1	37
Modbus register 36 Value	99	1	41-64	
Display 46	Modbus register 37 Minor Under	99	1	1
	Modbus register 37 Minor Over	99	1	2
	Modbus register 37 Major Under	99	1	3
	Modbus register 37 Major Over	99	1	4
	Modbus register 37 Not detected	99	1	5
	Modbus register 37 Value	99	1	9-32
	Modbus register 38 Minor Under	99	1	33
	Modbus register 38 Minor Over	99	1	34
	Modbus register 38 Major Under	99	1	35
	Modbus register 38 Major Over	99	1	36
	Modbus register 38 Not detected	99	1	37
Modbus register 38 Value	99	1	41-64	
Display 47	Modbus register 39 Minor Under	99	1	1
	Modbus register 39 Minor Over	99	1	2
	Modbus register 39 Major Under	99	1	3
	Modbus register 39 Major Over	99	1	4
	Modbus register 39 Not detected	99	1	5
	Modbus register 39 Value	99	1	9-32
	Modbus register 40 Minor Under	99	1	33
	Modbus register 40 Minor Over	99	1	34
	Modbus register 40 Major Under	99	1	35
	Modbus register 40 Major Over	99	1	36
	Modbus register 40 Not detected	99	1	37
Modbus register 40 Value	99	1	41-64	
Display 48	Modbus register 41 Minor Under	99	1	1
	Modbus register 41 Minor Over	99	1	2
	Modbus register 41 Major Under	99	1	3
	Modbus register 41 Major Over	99	1	4
	Modbus register 41 Not detected	99	1	5
	Modbus register 41 Value	99	1	9-32
	Modbus register 42 Minor Under	99	1	33
	Modbus register 42 Minor Over	99	1	34
	Modbus register 42 Major Under	99	1	35
	Modbus register 42 Major Over	99	1	36
	Modbus register 42 Not detected	99	1	37
Modbus register 42 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 49	Modbus register 43 Minor Under	99	1	1
	Modbus register 43 Minor Over	99	1	2
	Modbus register 43 Major Under	99	1	3
	Modbus register 43 Major Over	99	1	4
	Modbus register 43 Not detected	99	1	5
	Modbus register 43 Value	99	1	9-32
	Modbus register 44 Minor Under	99	1	33
	Modbus register 44 Minor Over	99	1	34
	Modbus register 44 Major Under	99	1	35
	Modbus register 44 Major Over	99	1	36
	Modbus register 44 Not detected	99	1	37
Modbus register 44 Value	99	1	41-64	
Display 50	Modbus register 45 Minor Under	99	1	1
	Modbus register 45 Minor Over	99	1	2
	Modbus register 45 Major Under	99	1	3
	Modbus register 45 Major Over	99	1	4
	Modbus register 45 Not detected	99	1	5
	Modbus register 45 Value	99	1	9-32
	Modbus register 46 Minor Under	99	1	33
	Modbus register 46 Minor Over	99	1	34
	Modbus register 46 Major Under	99	1	35
	Modbus register 46 Major Over	99	1	36
	Modbus register 46 Not detected	99	1	37
Modbus register 46 Value	99	1	41-64	
Display 51	Modbus register 47 Minor Under	99	1	1
	Modbus register 47 Minor Over	99	1	2
	Modbus register 47 Major Under	99	1	3
	Modbus register 47 Major Over	99	1	4
	Modbus register 47 Not detected	99	1	5
	Modbus register 47 Value	99	1	9-32
	Modbus register 48 Minor Under	99	1	33
	Modbus register 48 Minor Over	99	1	34
	Modbus register 48 Major Under	99	1	35
	Modbus register 48 Major Over	99	1	36
	Modbus register 48 Not detected	99	1	37
Modbus register 48 Value	99	1	41-64	
Display 52	Modbus register 49 Minor Under	99	1	1
	Modbus register 49 Minor Over	99	1	2
	Modbus register 49 Major Under	99	1	3
	Modbus register 49 Major Over	99	1	4
	Modbus register 49 Not detected	99	1	5
	Modbus register 49 Value	99	1	9-32
	Modbus register 50 Minor Under	99	1	33
	Modbus register 50 Minor Over	99	1	34
	Modbus register 50 Major Under	99	1	35
	Modbus register 50 Major Over	99	1	36
	Modbus register 50 Not detected	99	1	37
Modbus register 50 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 53	Modbus register 51 Minor Under	99	1	1
	Modbus register 51 Minor Over	99	1	2
	Modbus register 51 Major Under	99	1	3
	Modbus register 51 Major Over	99	1	4
	Modbus register 51 Not detected	99	1	5
	Modbus register 51 Value	99	1	9-32
	Modbus register 52 Minor Under	99	1	33
	Modbus register 52 Minor Over	99	1	34
	Modbus register 52 Major Under	99	1	35
	Modbus register 52 Major Over	99	1	36
	Modbus register 52 Not detected	99	1	37
Modbus register 52 Value	99	1	41-64	
Display 54	Modbus register 53 Minor Under	99	1	1
	Modbus register 53 Minor Over	99	1	2
	Modbus register 53 Major Under	99	1	3
	Modbus register 53 Major Over	99	1	4
	Modbus register 53 Not detected	99	1	5
	Modbus register 53 Value	99	1	9-32
	Modbus register 54 Minor Under	99	1	33
	Modbus register 54 Minor Over	99	1	34
	Modbus register 54 Major Under	99	1	35
	Modbus register 54 Major Over	99	1	36
	Modbus register 54 Not detected	99	1	37
Modbus register 54 Value	99	1	41-64	
Display 55	Modbus register 55 Minor Under	99	1	1
	Modbus register 55 Minor Over	99	1	2
	Modbus register 55 Major Under	99	1	3
	Modbus register 55 Major Over	99	1	4
	Modbus register 55 Not detected	99	1	5
	Modbus register 55 Value	99	1	9-32
	Modbus register 56 Minor Under	99	1	33
	Modbus register 56 Minor Over	99	1	34
	Modbus register 56 Major Under	99	1	35
	Modbus register 56 Major Over	99	1	36
	Modbus register 56 Not detected	99	1	37
Modbus register 56 Value	99	1	41-64	
Display 56	Modbus register 57 Minor Under	99	1	1
	Modbus register 57 Minor Over	99	1	2
	Modbus register 57 Major Under	99	1	3
	Modbus register 57 Major Over	99	1	4
	Modbus register 57 Not detected	99	1	5
	Modbus register 57 Value	99	1	9-32
	Modbus register 58 Minor Under	99	1	33
	Modbus register 58 Minor Over	99	1	34
	Modbus register 58 Major Under	99	1	35
	Modbus register 58 Major Over	99	1	36
	Modbus register 58 Not detected	99	1	37
Modbus register 58 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Display	Description	Port	Address	Point
Display 57	Modbus register 59 Minor Under	99	1	1
	Modbus register 59 Minor Over	99	1	2
	Modbus register 59 Major Under	99	1	3
	Modbus register 59 Major Over	99	1	4
	Modbus register 59 Not detected	99	1	5
	Modbus register 59 Value	99	1	9-32
	Modbus register 60 Minor Under	99	1	33
	Modbus register 60 Minor Over	99	1	34
	Modbus register 60 Major Under	99	1	35
	Modbus register 60 Major Over	99	1	36
	Modbus register 60 Not detected	99	1	37
Modbus register 60 Value	99	1	41-64	
Display 58	Modbus register 61 Minor Under	99	1	1
	Modbus register 61 Minor Over	99	1	2
	Modbus register 61 Major Under	99	1	3
	Modbus register 61 Major Over	99	1	4
	Modbus register 61 Not detected	99	1	5
	Modbus register 61 Value	99	1	9-32
	Modbus register 62 Minor Under	99	1	33
	Modbus register 62 Minor Over	99	1	34
	Modbus register 62 Major Under	99	1	35
	Modbus register 62 Major Over	99	1	36
	Modbus register 62 Not detected	99	1	37
Modbus register 62 Value	99	1	41-64	
Display 59	Modbus register 63 Minor Under	99	1	1
	Modbus register 63 Minor Over	99	1	2
	Modbus register 63 Major Under	99	1	3
	Modbus register 63 Major Over	99	1	4
	Modbus register 63 Not detected	99	1	5
	Modbus register 63 Value	99	1	9-32
	Modbus register 64 Minor Under	99	1	33
	Modbus register 64 Minor Over	99	1	34
	Modbus register 64 Major Under	99	1	35
	Modbus register 64 Major Over	99	1	36
	Modbus register 64 Not detected	99	1	37
Modbus register 64 Value	99	1	41-64	

Note: "Digital Temp Sensor Value" must be multiplied by the appropriate VBIT from table 14.2 in order to create a displayable Value*.

Resolution		
Input Voltage Range	VBIT	Accuracy
0-5V	.0015V	+/- .05V
5-14V	.0038V	+/- .14V
14-30V	.0081V	+/- .30V
30-70V	.0182V	+/- .70V
70-90V	.0231V	+/- .90V

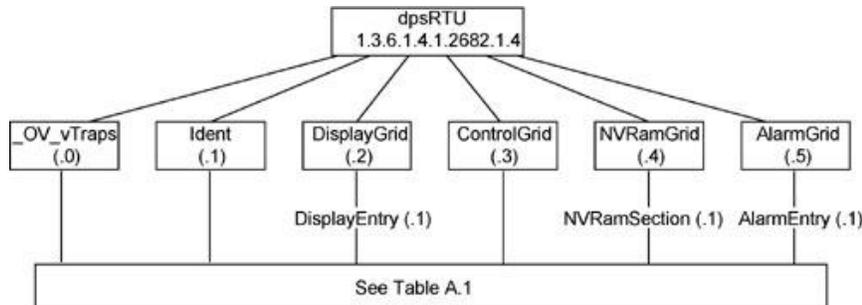
VBIT Values used for creating appropriate cell Values.

15.3 System Alarms Display Map

Display	Points	Alarm Point	Description	Solution
2	33	Unit reset	Unit has rebooted.	If unintentional, call DPS Tech Support: (559) 454-1600.
	34	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.
	35	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.
	36	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.
	37	Dynamic memory full	Not expected to occur.	Call DPS Tech Support (559) 454-1600
	38	Notification 1 failed	A notification 1 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	39	Notification 2 failed	A notification 2 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	40	Notification 3 failed	A notification 3 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	41	Notification 4 failed	A notification 4 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	42	Notification 5 failed	A notification 5 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	43	Notification 6 failed	A notification 6 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	44	Notification 7 failed	A notification 7 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	45	Notification 8 failed	A notification 8 event, such as a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	57	Default Configuration	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.
	58	Dip Switch Config	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.
	59	MAC Address Not Set	The MAC Address is not set	Call DPS Tech Support - (559) - 454-1600
	60	IP Address Not Set	The IP Address is not set	See Section "Quick Start: How to Connect to the NetGuardian 16A via Craft Port." If not using the NetGuardian over LAN, set the IP address to 255.255.255.255
	61	LAN hardware error	The unit does not have a solid LAN link to the hub, switch, or router	If connecting to a hub, you might require a LAN crossover cable
62	SNMP processing error	SNMP trap address is not defined and an SNMP trap event occurred..	Check proxy connection. The serial port data may not be getting collected as expected.	
63	SNMP community error	Community string does not match your SNMP master's community string.	Verify both community strings to make sure they match.	
64	LAN TX packet drop	An error occurred transmitting data over LAN.	Verify that you can ping both devices.	

15.4 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 14.3 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).



Tbl. B1 (0.) _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)	* Must be set to "1" to perform the resync request which will resend TRAPs for any standing alarm.	
P0001Set (.10001) through P0064Set (.10064)		
P0001Clr (.20001) through P0064Clr (.20064)		
Tbl. B3 (.3) ControlGrid points		Tbl. B5 (.5) AlarmEntry points
ControlGrid (1.3.6.1.4.1.2682.1.4.3)		AlarmEntry (1.3.6.1.4.1.2682.1.4.5.1)
Port (.1)		Aport (.1)
Address (.2)		AAddress (.2)
Display (.3)		ADisplay (.3)
Point (.4)		APoint (.4)
Action (.5)		APntDesc (.5)*
		AState (.6)
		* For specific alarm points, see Table B6

The NetGuardian OID 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.

15.5 SNMP Granular Trap Packets

The tables below provide a list of the information contained in the SNMP Trap packets sent by the NetGuardian 16A

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

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

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

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

SNMP Headers and descriptions

16 Frequently Asked Questions

Here are answers to some common questions from NetGuardian 16A users. The latest FAQs can be found on the NetGuardian 16A support web page, <http://www.dpstele.com>.

If you have a question about the NetGuardian 16A, please call us at **(559) 454-1600** or e-mail us at support@dpstele.com

16.1 General FAQs

Q. How do I telnet to the NetGuardian 16A?

A. You must use **Port 2002** to connect to the NetGuardian 16A. 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 NetGuardian 16A and Port 2002. For example, to connect to the NetGuardian 16A using the standard Windows Telnet client, click Start, click Run, and type "telnet <NetGuardian 16A IP address> 2002."

Q. How do I connect my NetGuardian 16A to the LAN?

A. To connect your NetGuardian 16A 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 NetGuardian 16A 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 NetGuardian 16A.

Q. The LAN link LED is green on my NetGuardian 16A, 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 NetGuardian 16A. Ordering TTL points for your NetGuardian 16A 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 E1 WAN Mux 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 E1 WAN Mux 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.

16.2 SNMP FAQs

Q. Which version of SNMP is supported by the SNMP agent on the NetGuardian?

A. SNMP v1 and SNMPv2c.

Q. Does the NetGuardian 16A support MIB-2 and/or any other standard MIBs?

A. The NetGuardian 16A supports the bulk of MIB-2.

Q. Does the NetGuardian 16A SNMP agent support both NetGuardian 16A and T/MonXM variables?

A. The NetGuardian 16A SNMP agent manages an embedded MIB that supports only the NetGuardian 16A'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 NetGuardian 16A 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 NetGuardian 16A 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 NetGuardian 16A and the SNMP manager are both on the network. Use the unit's ping command to ping the SNMP manager.

17 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.

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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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