Instruction Manual
Environmental Monitoring Unit with Output Relays

Watchdog 1400 Series
Firmware Version 3

Contents

Specifications

Overview

The Watchdog 1400 Environmental Monitoring and Output Units provide remote environmental monitoring and alarming capability needed to detect climate conditions in data centers. Additionally, the Watchdog 1400 provides three output relays that can be operated remotely or set to automatically open or close based on alarm conditions. The Watchdog 1400 units are equipped with a built-in web server. Web pages, including graphs, are generated by the unit to monitor environmental conditions within the cabinet. The Web pages are also used to control the output relays. No software other than a web browser is required for operation and several data formats are available. The Watchdog 1400 has a built-in sensor to monitor temperature as well as four ports for optional external sensors. The Watchdog 1400 Series also has six I/O ports for connecting additional external sensors such as Water and Door Sensors. The Watchdog 1400 has a scrolling LCD display and built-in alarm buzzer.

Environmental

Temperature

Operating:	10°C (50°F) min	45°C (104°F) max
Storage:	-25°C (-13°F) min	65°C (149°F) max

Humidity

Operating:	5% min	95% max	(non-condensing)
Storage:	5% min	95% max	(non-condensing)

Elevation

Operating:	0 m (0 ft) min	2000 m (6561 ft) max
Storage:	0 m (0 ft) min	15240 m (50000 ft) max

Electrical

6 Volts DC, 2 Amps

Output Relay Contact Ratings

The output relay contacts are intended to carry low voltage signals only. Do not exceed the following ratings on the output relay contacts:

DC: 60 V, 30 W

AC: 30 Vrms, 1 A

Warning: Consideration should be given to lockout-tagout and other procedures required for servicing external devices controlled by the Watchdog 1400 output relays. Appropriate safety precautions must always be taken when operating or maintaining equipment connected to the Watchdog 1400. Geist Manufacturing assumes no responsibility or liability for any injury or damage to any persons or property resulting from improper operation or maintenance of a device connected to the Watchdog 1400.

Caution: The Watchdog 1400 unit has not been evaluated for and should not be used in any application in which the failure of the Hardware could lead to death, personal injury or severe physical or property damage or environmental damage (collectively, "High-Risk Applications"), including but not limited to the operation of nuclear facilities, mass transit systems, aircraft navigation or aircraft communication systems, air traffic control, weapon systems and direct life support machines. Geist expressly disclaims any express or implied warranty or condition of fitness for High-Risk Applications.

Networking

Protocols

HTTP, HTTPS (SSL/TLS), SMTP, POP3, ICMP, DHCP, TCP/IP, NTP, Telnet, Syslog

Ethernet Link Speed

10 Mbit; half-duplex

Data Formats

HTML, SNMP, CSV/Plain Text, XML

EMC Verification

This Class A device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Installation

Guidelines

- If the Watchdog 1400 is installed in a cabinet the ambient temperature of the rack should be no greater than 45°C.
- Install the Watchdog 1400 such that the amount of airflow required for safe operation of equipment is not compromised.
- Mount the Watchdog 1400 so that a hazardous condition is not achieved due to uneven mechanical loading.

Mounting

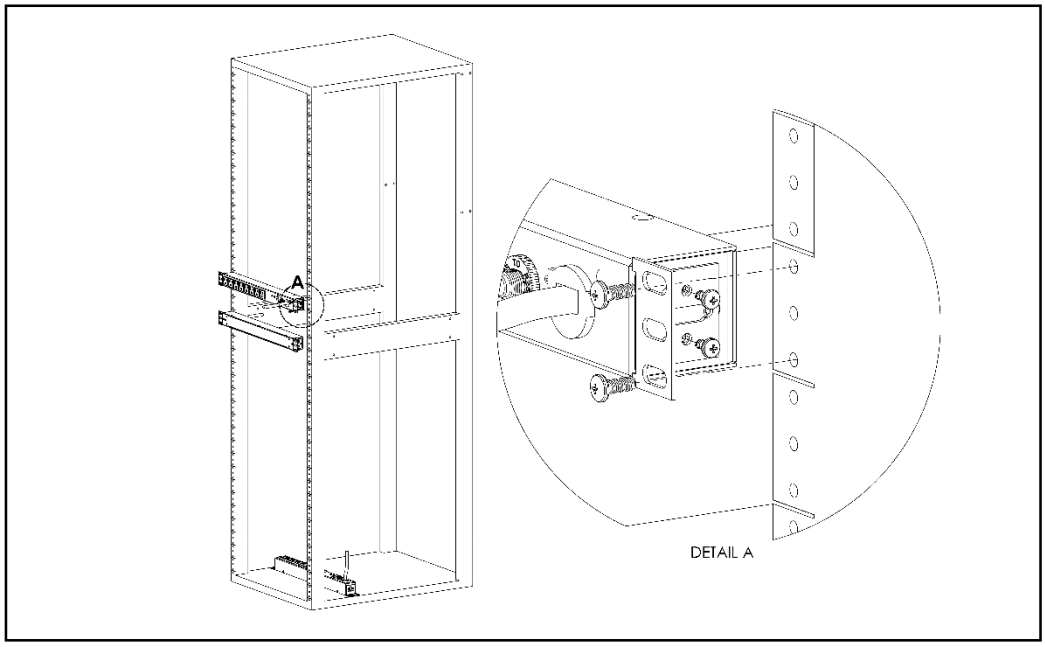

Figure 1: 19" Horizontal/Panel Mount Brackets (7938)

Using the 19” horizontal/panel mount brackets, attach unit to rack as shown

Network Overview

This product comes preconfigured with a default IP address set. Simply connect to the Environmental Monitoring Unit and access the web page with your browser.

Default IP Address

Watchdog 1400 units have a default IP address for initial setup and access to the unit if the assigned address is lost or forgotten. Once an IP address is assigned to a unit, the default IP address is no longer active. To restore the default IP address, press the reset button located below the network connector and hold for approximately 20 seconds. The idle and activity lights on the network connector will both light up when the IP address has been reset. The reset button is accessed through the white, circular hole located below the Ethernet jack.

Note: Pressing the reset button under the network connector will restore the default IP address and will also clear all password settings.

The Configuration page allows you to assign the network properties or use DHCP to connect to your network. Access to the unit requires the IP address to be known, so use of a Static IP or reserved DHCP is recommended. The default address is shown on the front of the unit:

- **IP Address:** 192.168.123.123
- **Subnet Mask:** 255.255.255.0
- **Gateway:** 192.168.123.1

Initial Setup

Connect the Watchdog 1400 to your computer using a crossover cable or hub/switch.

Windows OS

Navigate to the Local Area Network Adapter Connections Properties and change the Internet Protocol Version 4 (TCP/IPv4) Properties. Select "Use the following IP address". Use these settings:

- **IP Address:** 192.168.123.1
- **Subnet Mask:** 255.255.255.0
- **Gateway:** Leave blank

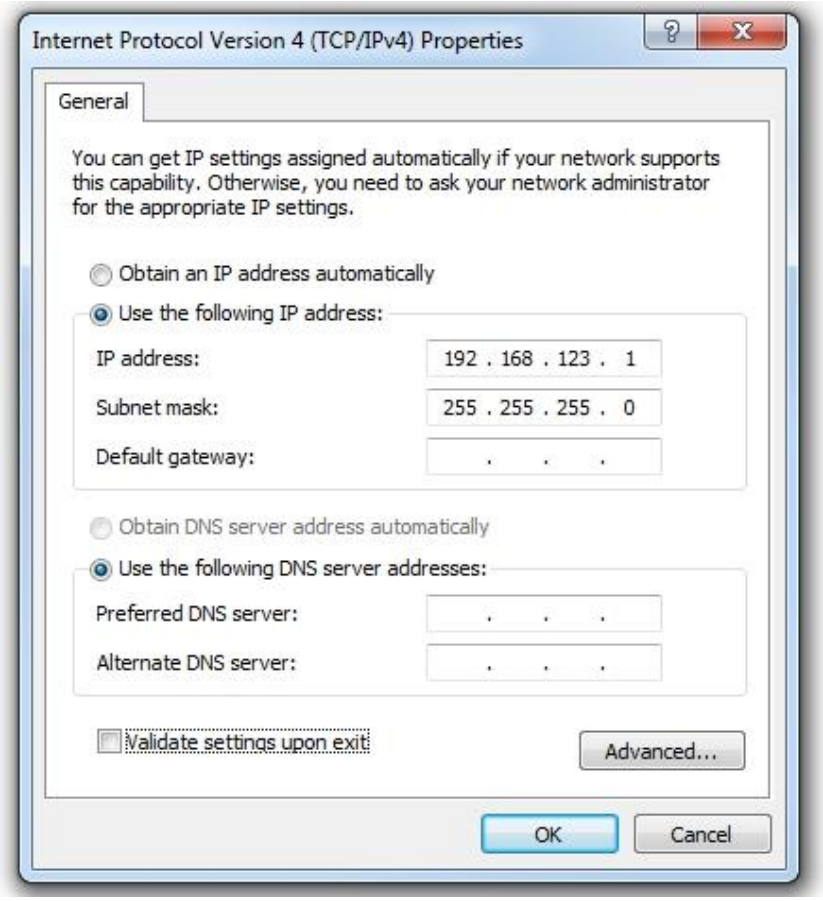

Figure 2: Network settings for initial setup. Images varies depending on Windows versions.

Save changes.

The unit should now be accessible in a web browser via the unit's permanent IP address: http://192.168.123.123/. See Unit Configuration (page 20) for details.

Mac OS

Open System Preferences via the Dock or the Apple menu.

Select "Network" under "Internet & Network."

Select "Ethernet" from the list on the left side of the window and enter these settings on the right side of the window:

- **Configure:** Manually
- **IP Address:** 192.168.123.1
- **Subnet Mask:** 255.255.255.0
- **Router:** Leave blank

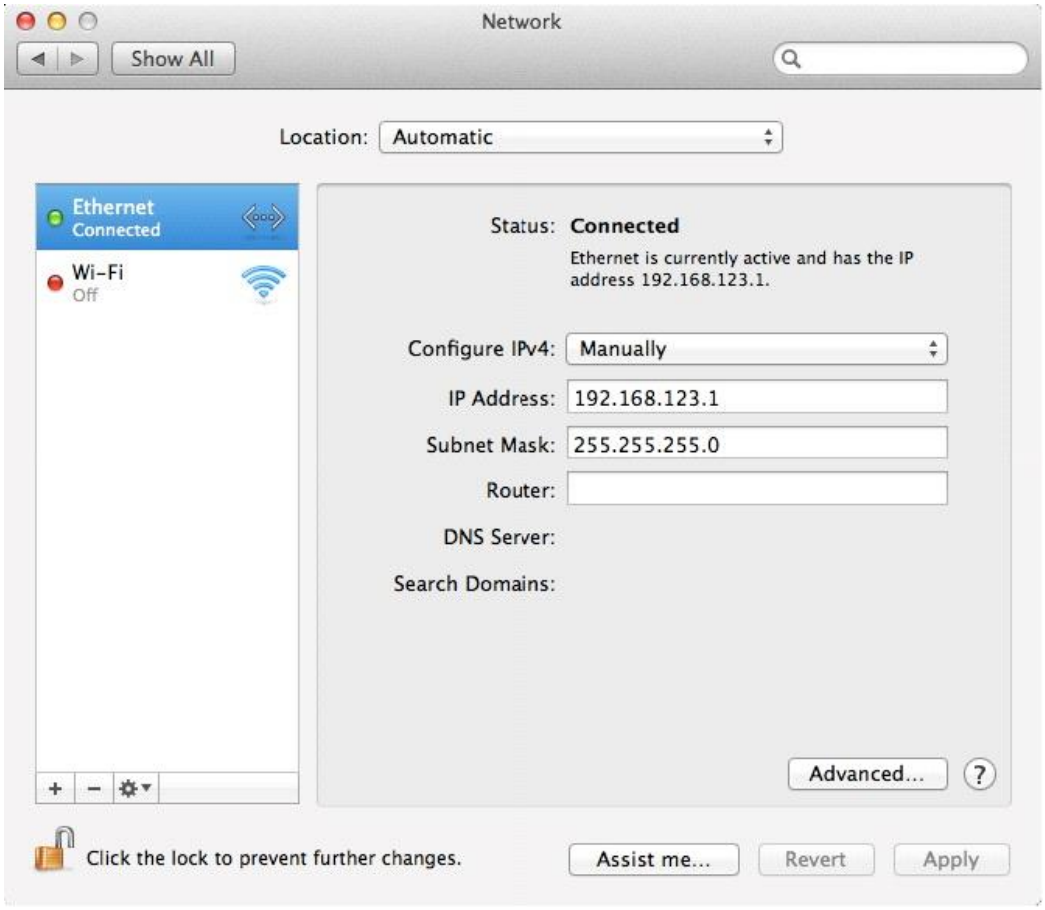

Figure 3: Mac OS network settings for initial setup. Image varies depending on Mac versions.

Apply changes.

The unit should now be accessible in a web browser via the unit's permanent IP address: http://192.168.123.123/. See Unit Configuration (page 20) for details.

Web Interface

Overview

The unit is accessible via a standard, unencrypted HTTP connection as well as an encrypted HTTPS (SSL) connection. The following web pages are available:

Sensors Page

The front page, *Sensors*, gives both instantaneous and historical views of the unit's data. Real time readings are provided for all sensor data next to historical graphs.

Optional cameras may be added and their live snapshots are shown on this page. Plug-and-play external sensors appear below the internal sensors when attached.

The menu bar allows access to the rest of the Environmental Monitoring Unit's functionality.

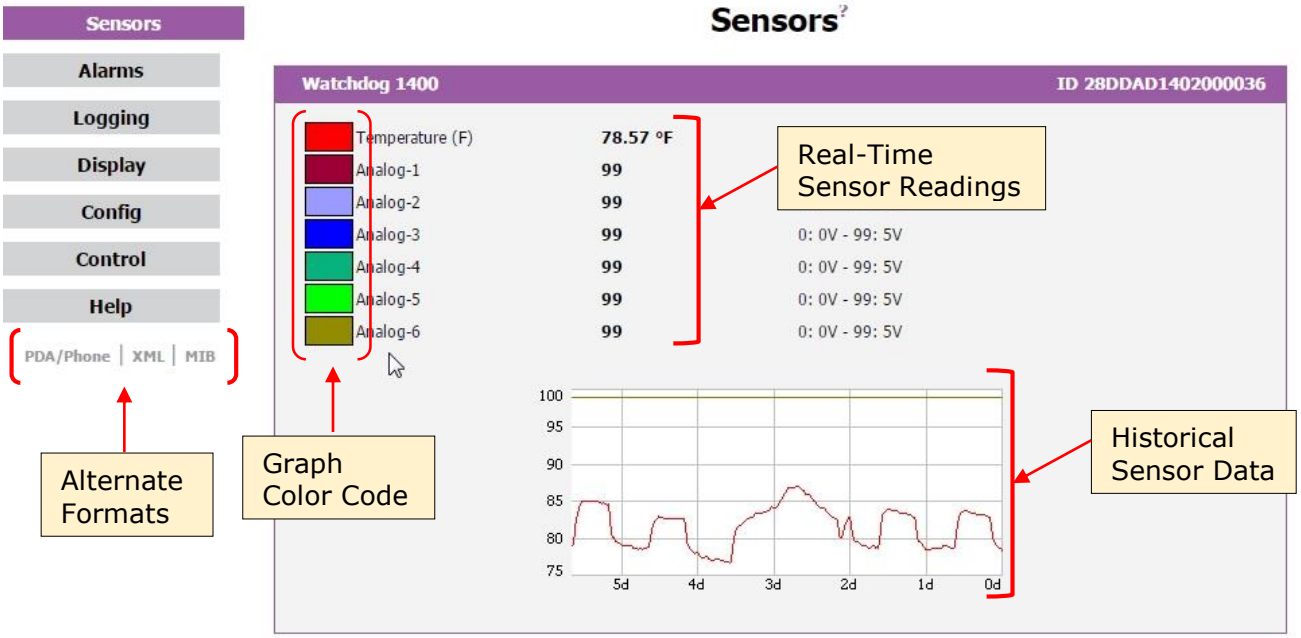

Figure 4: Sensors Page – Internal Sensor and I/O Data

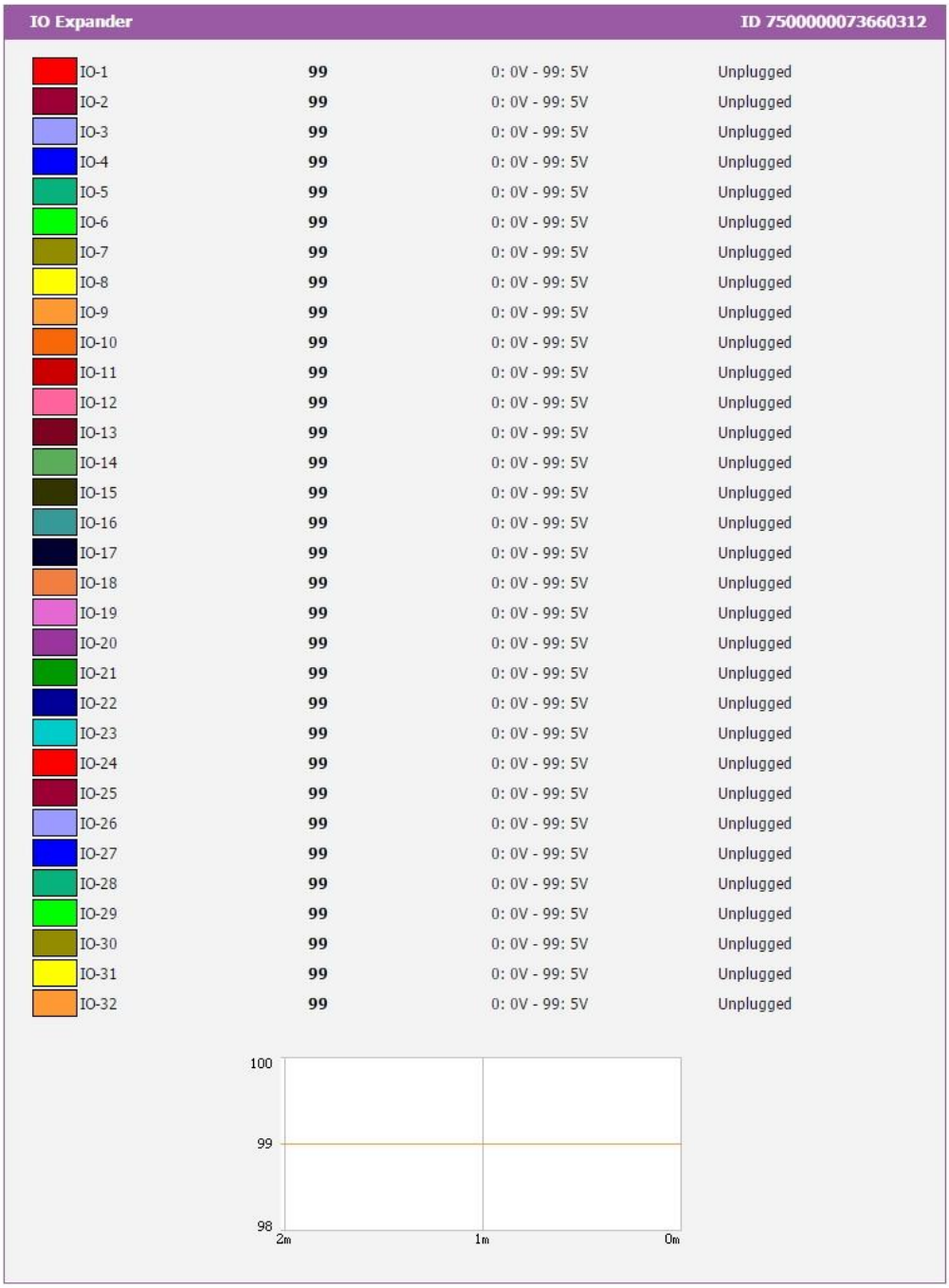

Figure 5: Sensors Page – External Sensor Data

Logging Page

The *Logging* page allows the user to access the historical data by selecting the desired sensors and time range to be graphed. All sensor values that can be graphed are logged into the data file at a rate of one point per minute. Please note that although data is logged once per minute, all sensor data used in the real time display and alarm functions is read at least once every 5 seconds for internal sensors and once every 30 seconds for external sensors. Checked readings are displayed on the LCD module. Recorded data is available for download in a comma-separated values (CSV) file.

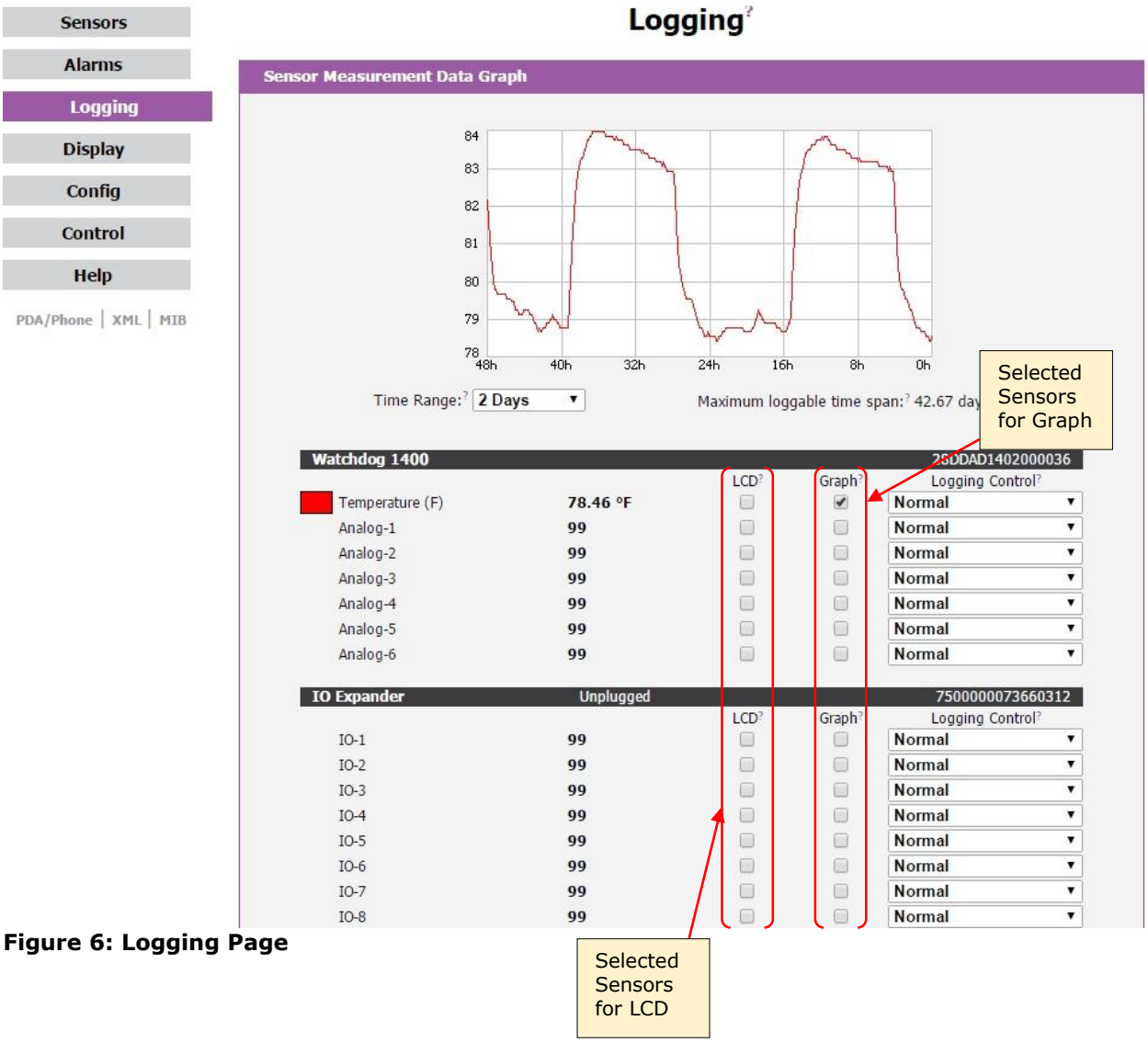

Figure 6: Logging Page

Display Page

The *Display* page allows the user to assign friendly names to internal and attached sensors as well as change the default temperature unit of measure for sensors. The display page also allows the user to select between the default and classic web page layouts. The default interface displays a vertical menu bar to the left of the main window, while the classic interface displays a horizontal menu bar across the top of the screen.

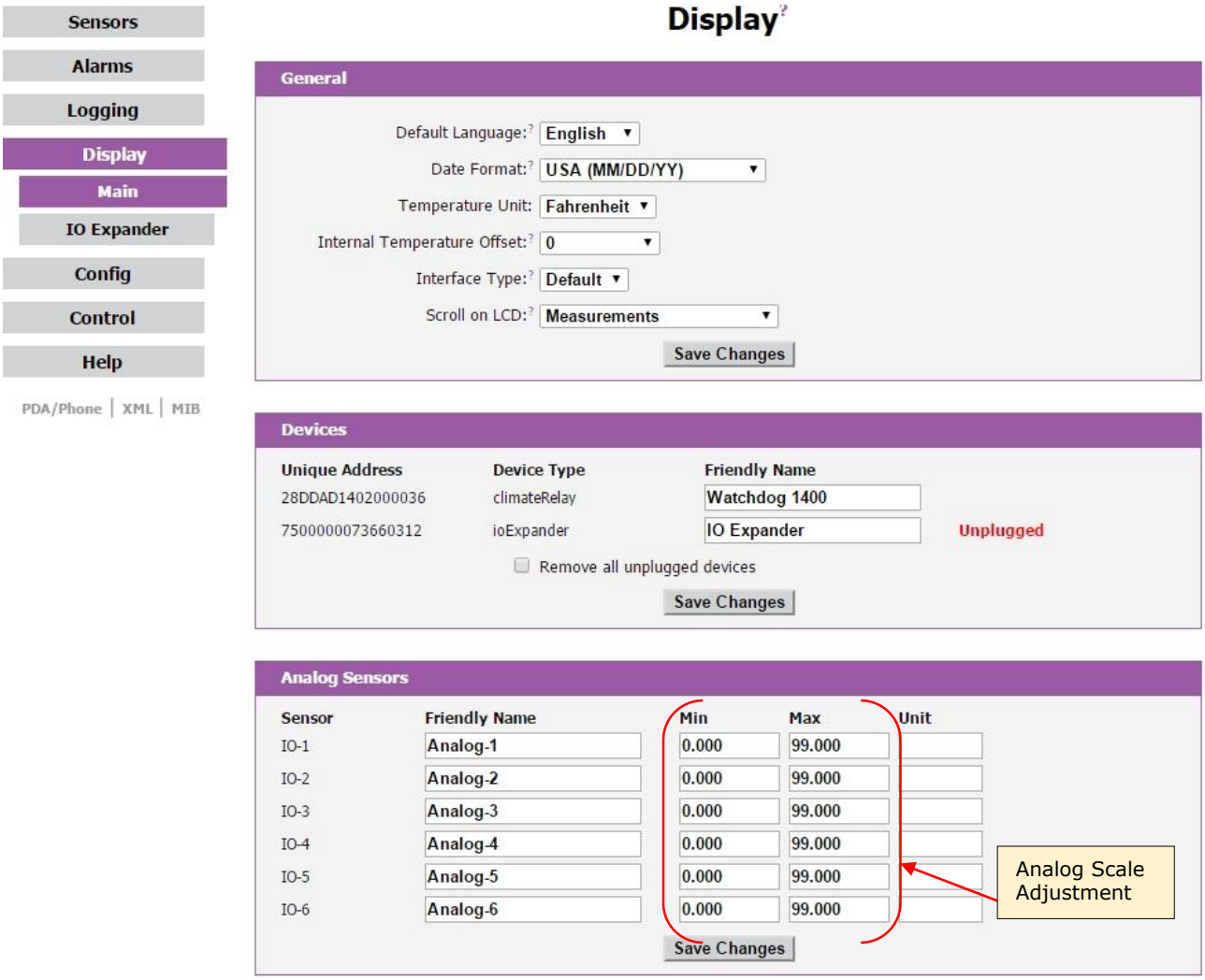

Figure 7: Display Main Page

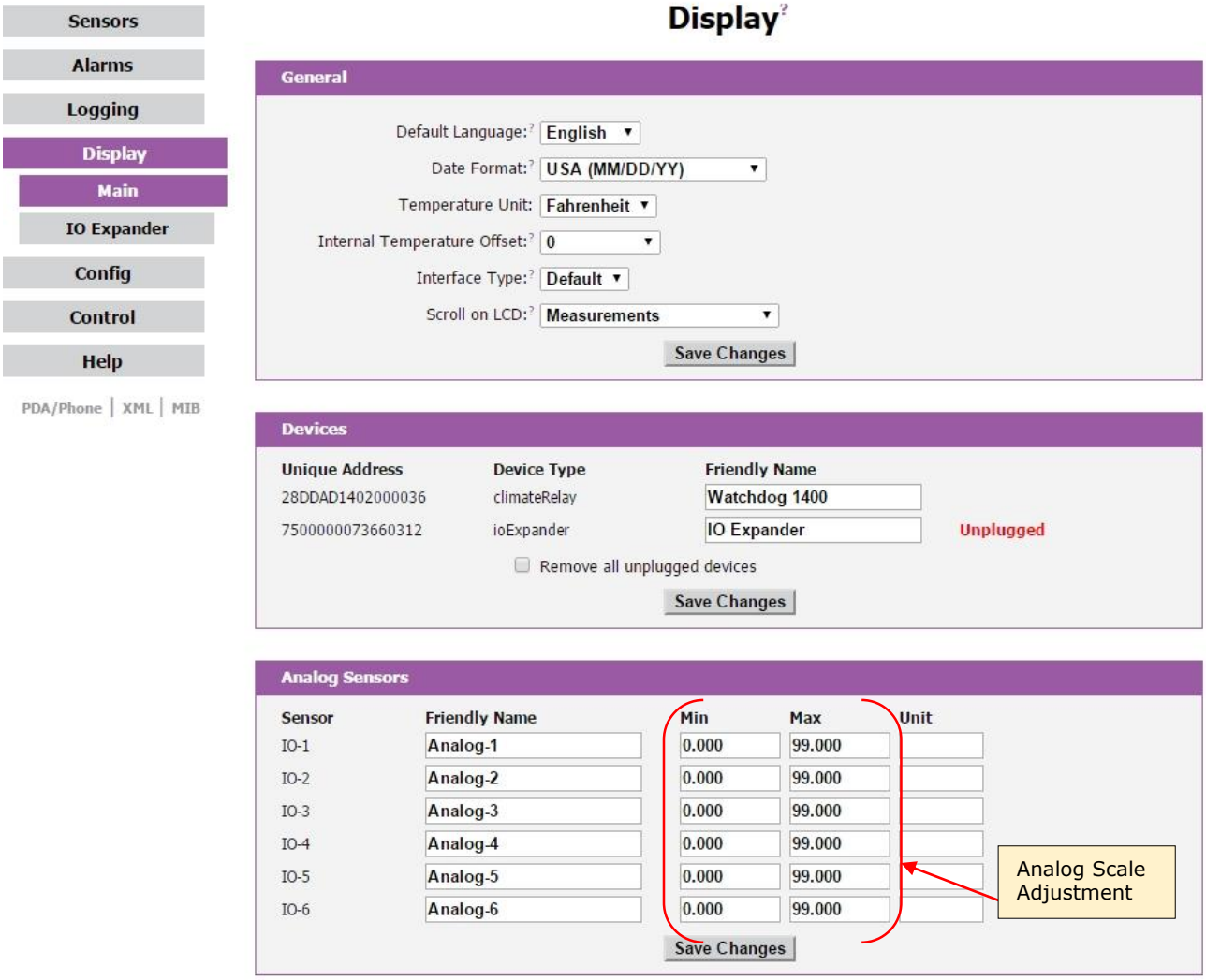

Figure 8: Display IO Expander Page

Alarms Page

The *Alarms* page allows the user to establish alarm conditions for each sensor reading. Alarm conditions can be established with either high or low trip thresholds. The alarms are displayed in different sections based on the sensor the alarm is associated with. Alarm options include relays, a local Buzzer, Email and SNMP Traps. See Alarms (page 28) for details.

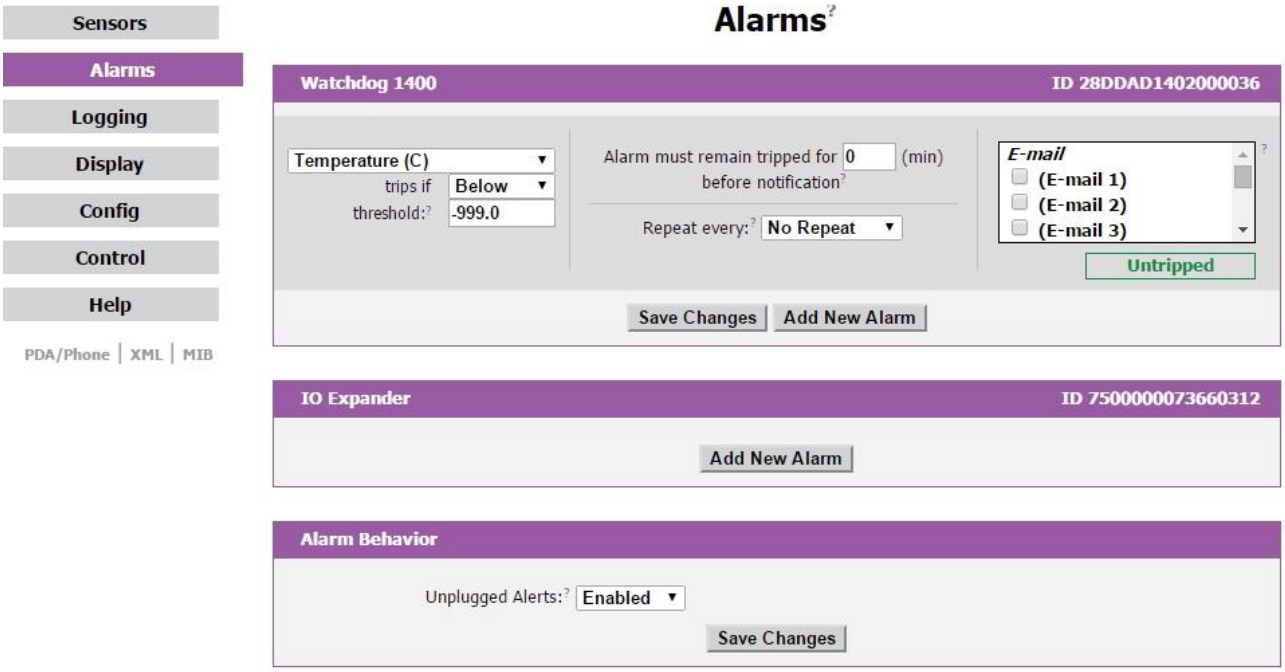

Figure 9: Alarms Page

Configuration Page

The *Configuration* page has five sub-tabs; *Network*, *Monitoring*, *Diagnostics*, *Event Log*, and *Admin*. See Unit Configuration (page 20) for details.

Configuration Network Tab

The user can enter and update the network settings on the *Network* tab of the *Configuration* page. See Unit Configuration section for details.

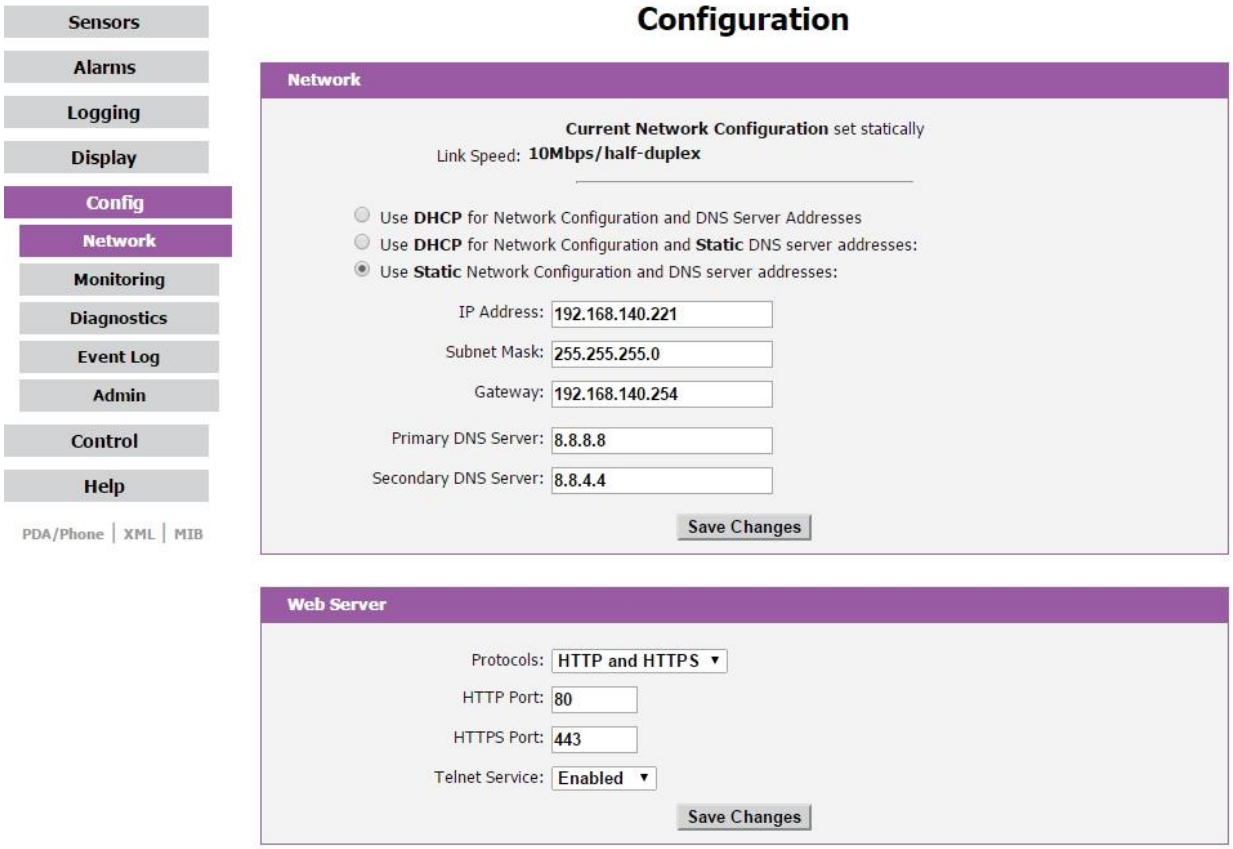

Figure 10: Configuration Network Tab

Configuration Monitoring Tab

The user can enter and update the email alert, SNMP, and camera settings on the *Monitoring* tab of the *Configuration* page. See Unit Configuration (page 20) section for details.

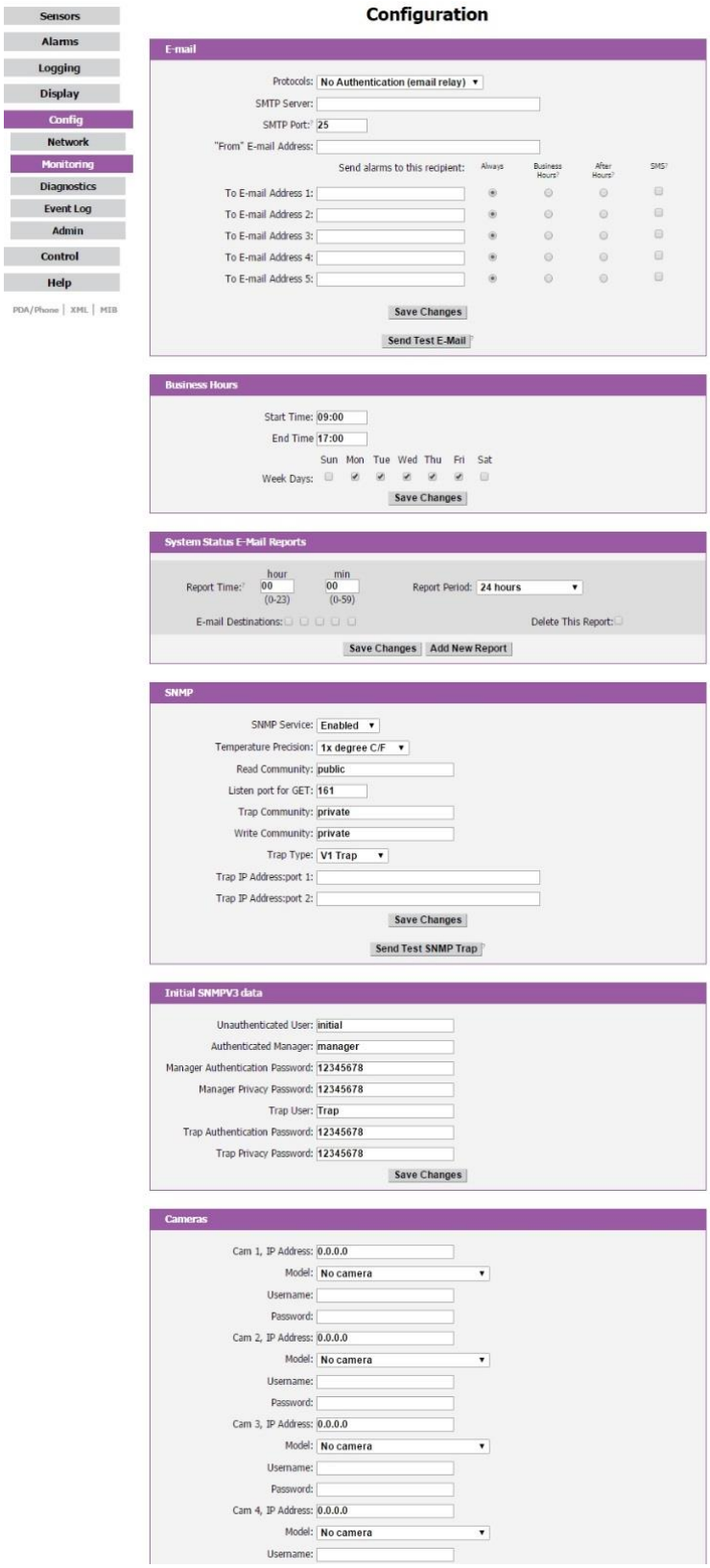

Figure 11: Configuration Monitoring Tab

Configuration Diagnostics Tab

The user can update the Syslog settings on the *Diagnostics* tab of the *Configuration* page.

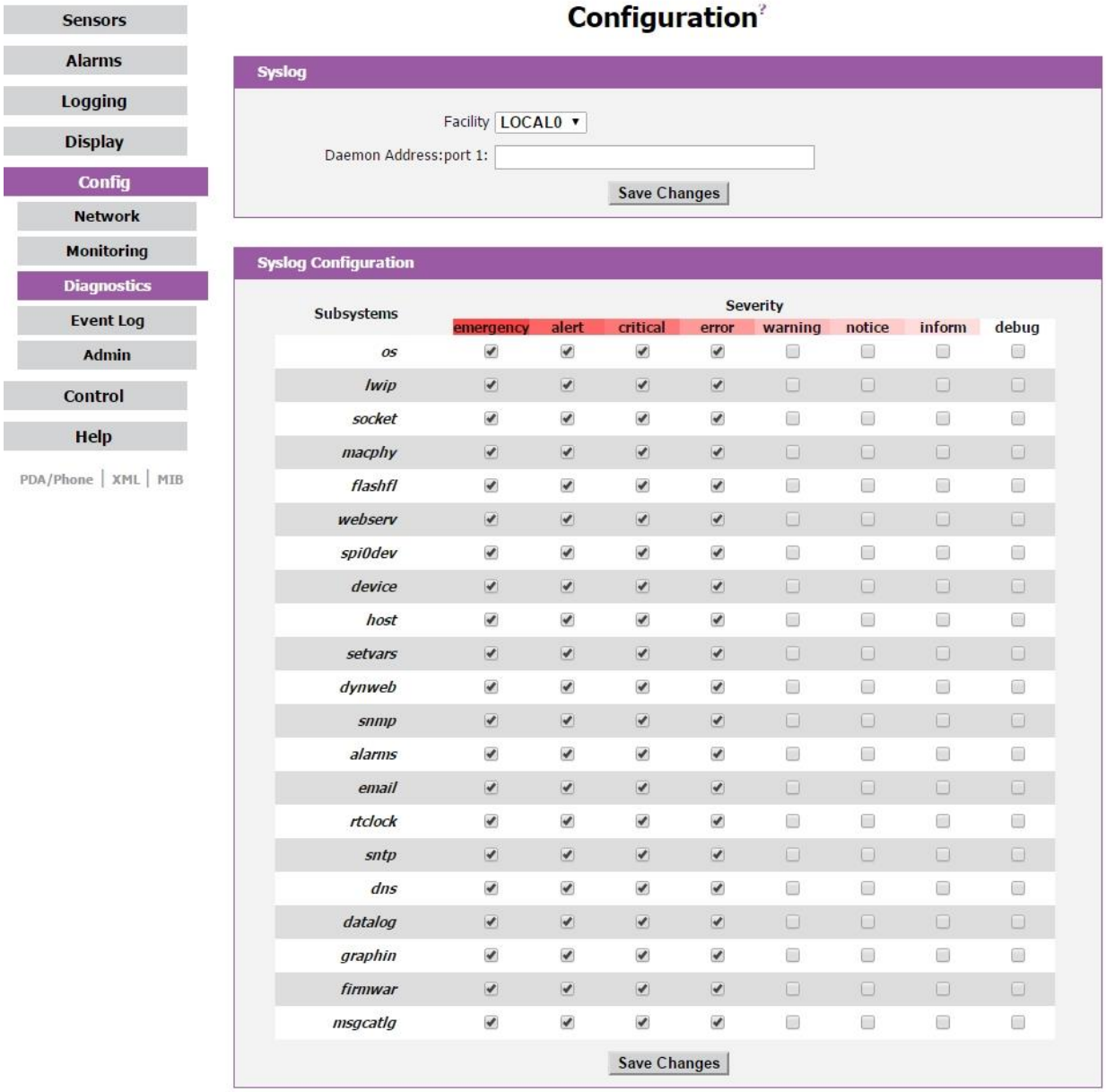

Figure 12: Configuration Diagnostics Tab

Configuration Event Log Tab

The user can view the Event Log and update the Memory Syslog settings on the *Event Log* tab of the *Configuration* page.

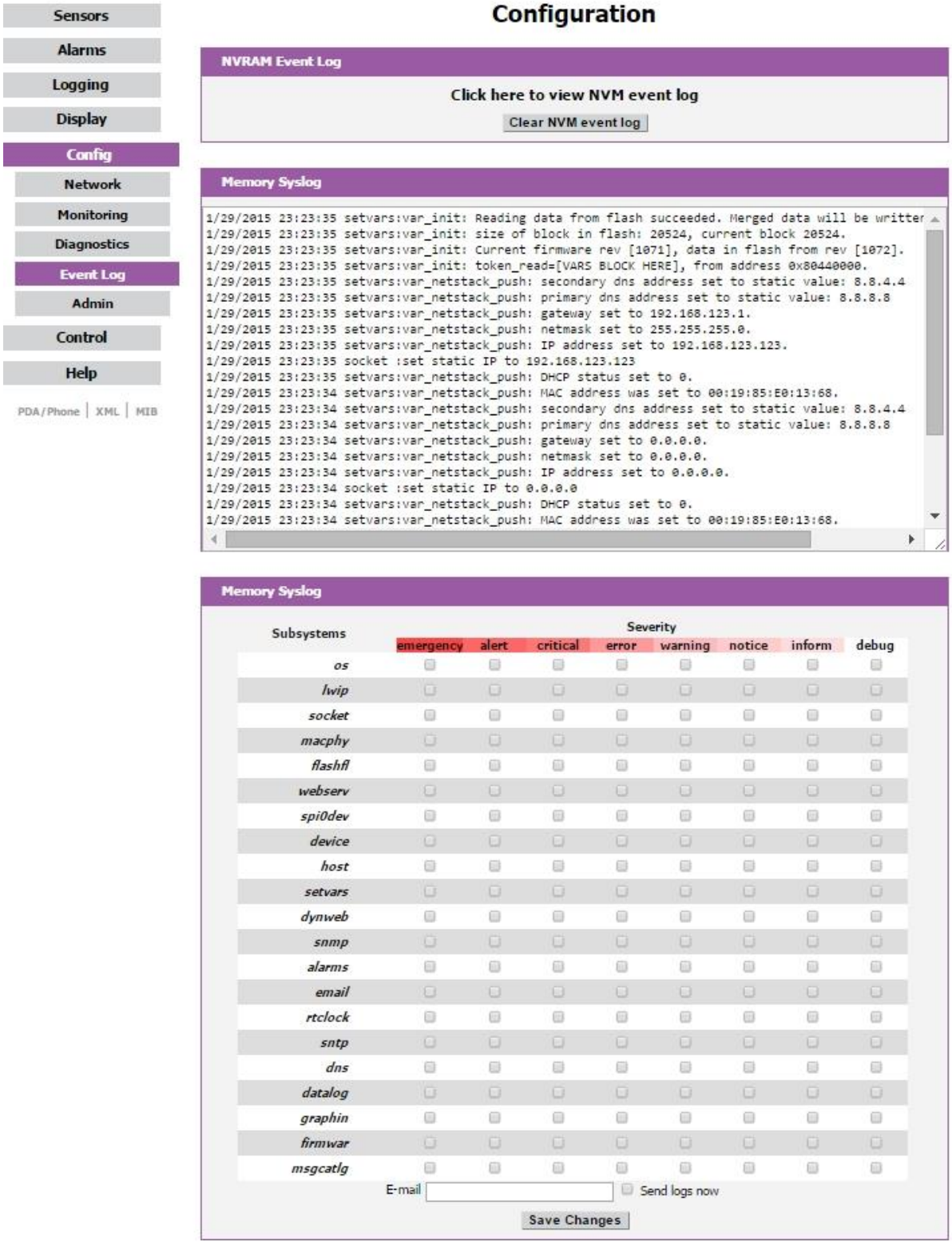

Figure 13: Configuration Event Log Tab

Configuration Admin Tab

The user can set the system clock and administrative information on this tab. Additionally the user can set administrator and account passwords. See Unit Configuration section for details.

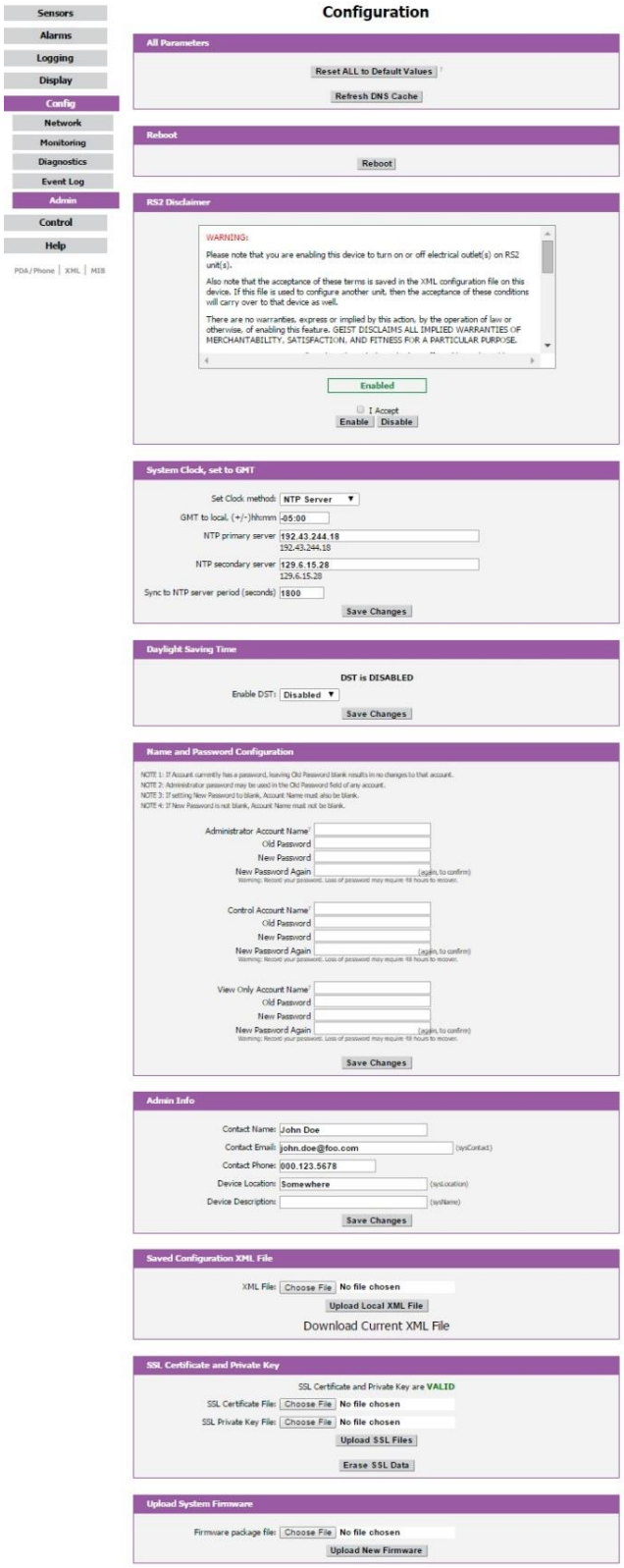

Figure 14: Configuration Admin Tab

Control Page

The *Control* page gives the user control of the low voltage output relays. The Watchdog 1400 Series units provide three output relays that can be operated remotely or set to automatically open or close based on alarm conditions. See Output Relays (page 26) for additional information.

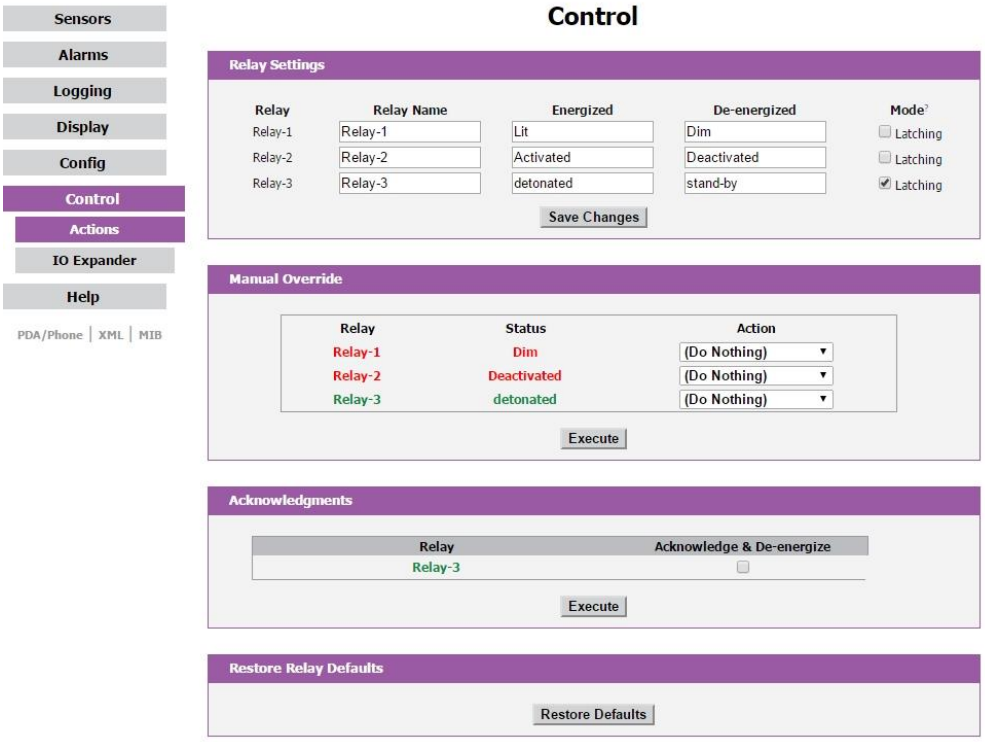

Figure 15: Control Actions Page

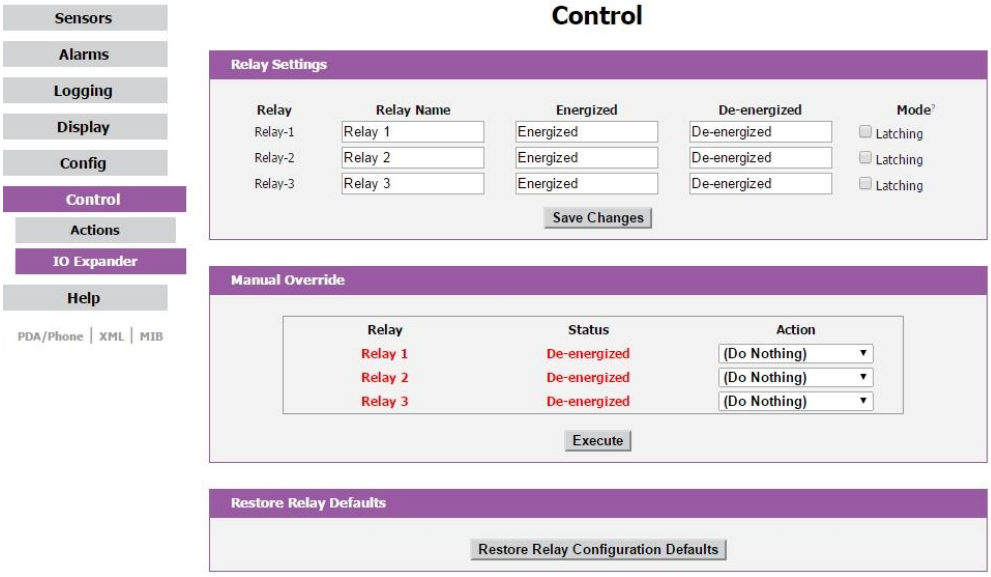

Figure 16: Control IO Expander Page

Unit Configuration

Network Configuration

The unit's network configuration is set on the *Network* tab of the *Configuration* page. Settings pertaining to the unit's network connection are:

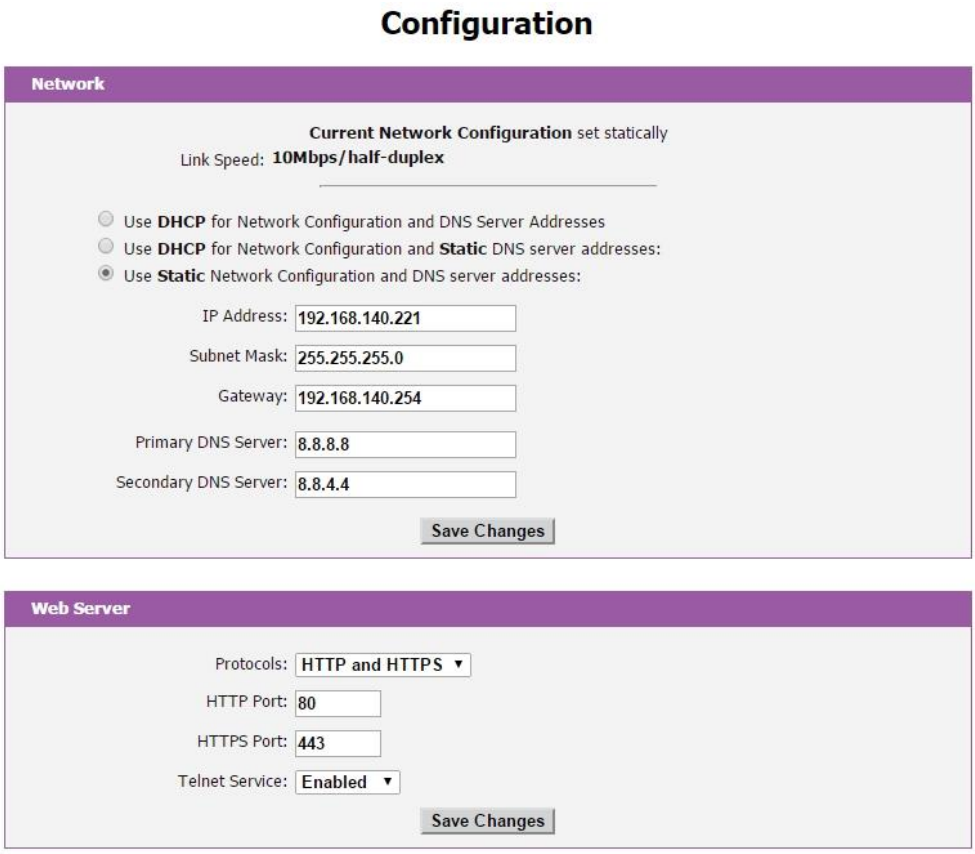

Figure 17: Network Configuration

- **DHCP:** Allows the unit to request a dynamic IP address from a server on the network.
- **Static IP Address/Net Mask/Gateway:** When not using a dynamic address, enter static network configuration information here.

Telnet Service: Enable or disable the built-in Telnet server. See

- Telnet (page 24) for details.
- **HTTP Services:** Enables/disables access via HTTP and HTTPS. Available options are: HTTP and HTTPS, HTTP only, and HTTPS only. It is not possible to disable the web interface completely.
- **HTTP/HTTPS Server Port:** Changes the TCP port that each server listens on.
- **DNS Servers:** Allows the unit to resolve host names for Email, NTP and SNMP servers as well as cameras.

Time and Date

The system clock is set on the *Admin* tab of the *Configuration* page. The unit comes preconfigured with the IP addresses of two NIST time servers and is set to the Central Time Zone (-0500 GMT). Should a local time server be preferred, enter its IP address into the "NTP primary server" box and click the "Save Changes" button. Clearing the time server addresses and clicking "Save Changes" will set the time servers back to the defaults. The unit attempts to contact the time servers during boot up and periodically while running. Until a time server is contacted or the system clock is manually set, all log time stamps will present time as the number of seconds since the unit was powered up and graphs will not be shown.

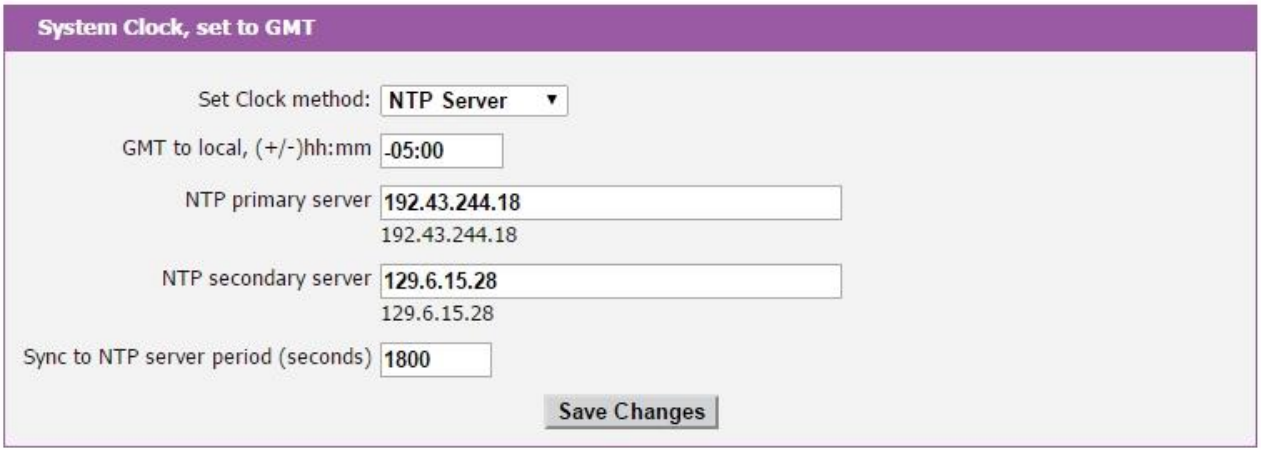

Figure 18: Time Settings

The time, date, IP address and friendly name of the unit are displayed in the top of each web page.

Figure 19: Time and Date Display

Note: The time and date are not adjusted for daylight savings time. Setting the time zone offset forward and backward an hour will cause a gap or overwriting of logs, respectively.

E-Mail

The unit is capable of sending e-mail to as many as five addresses at once. Most SMTP and ESMTP servers are compatible. Authentication options are None, POP3 (POP-before-SMTP) or ESMTP. The e-mail configuration is set on the *Monitoring* tab of the *Configuration* page.

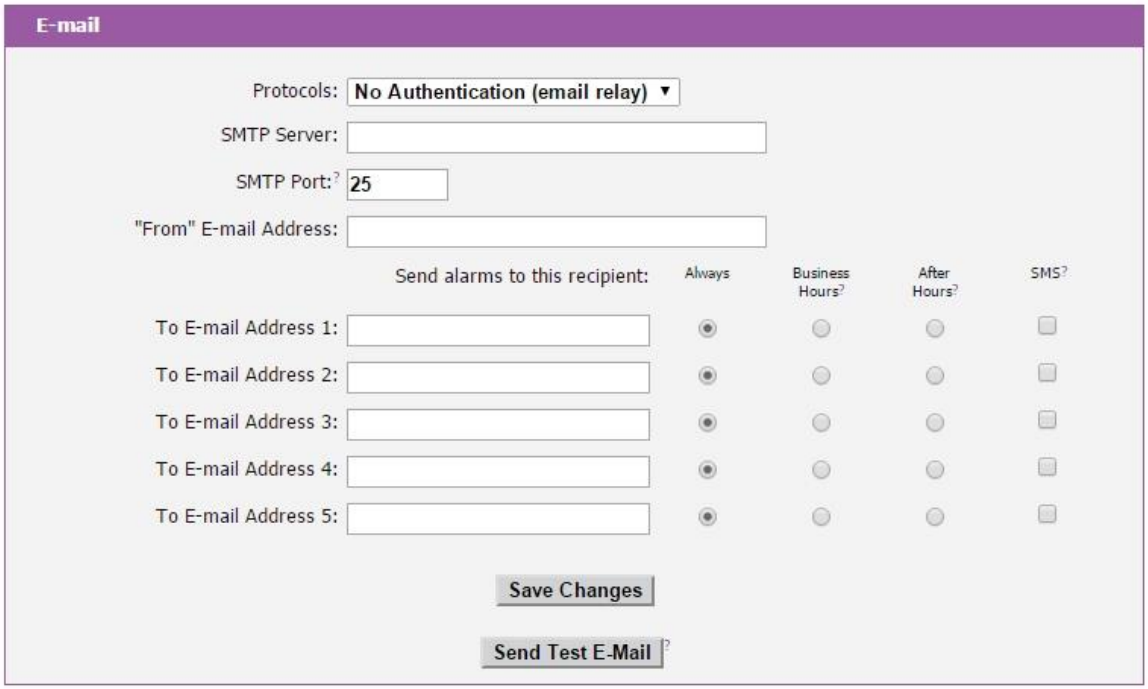

Figure 20: E-Mail Configuration

An SMTP server as well as "From" and "To" addresses are required to send e-mails. Some mail servers may require a username and password. In most cases, the username does not have to match the "From" address, but does need to be a valid user on the authenticating server. Microsoft Exchange servers will have to be set to allow SMTP relay from the IP address of the unit. In addition, a test email can be sent from the bottom of the *Monitoring* tab of the *Configuration* page.

Note: The unit cannot receive e-mails. The POP3 server is used strictly for authentication and is not required when using None or ESMTP.

Status Reports

When enabled, the unit will periodically send a full status report to all "To" e-mail addresses selected for the report. The report includes current unit data from all attached sensors as well as alarm states. Reporting frequency options are: weekly, hourly, every 2, 3, 4, 6, 8, 12, 24, or 48 hours. E-mail addresses are selected by checking the corresponding e-mail destination box when the report is created. Allowing the cursor to hover over an e-mail destination box will display the e-mail address that the box is associated with.

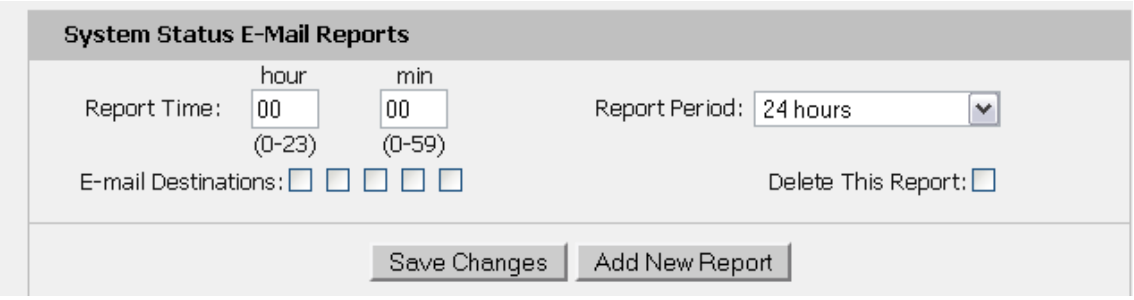

Figure 21: Email Report Settings

SNMP

The unit supports retrieval of all data via Simple Network Management Protocol (SNMP) v1, v2c, and v3. In addition, alarm traps can be sent to up to two IP addresses. The SNMP configuration is entered on the *Monitoring* tab of the *Configuration* page.

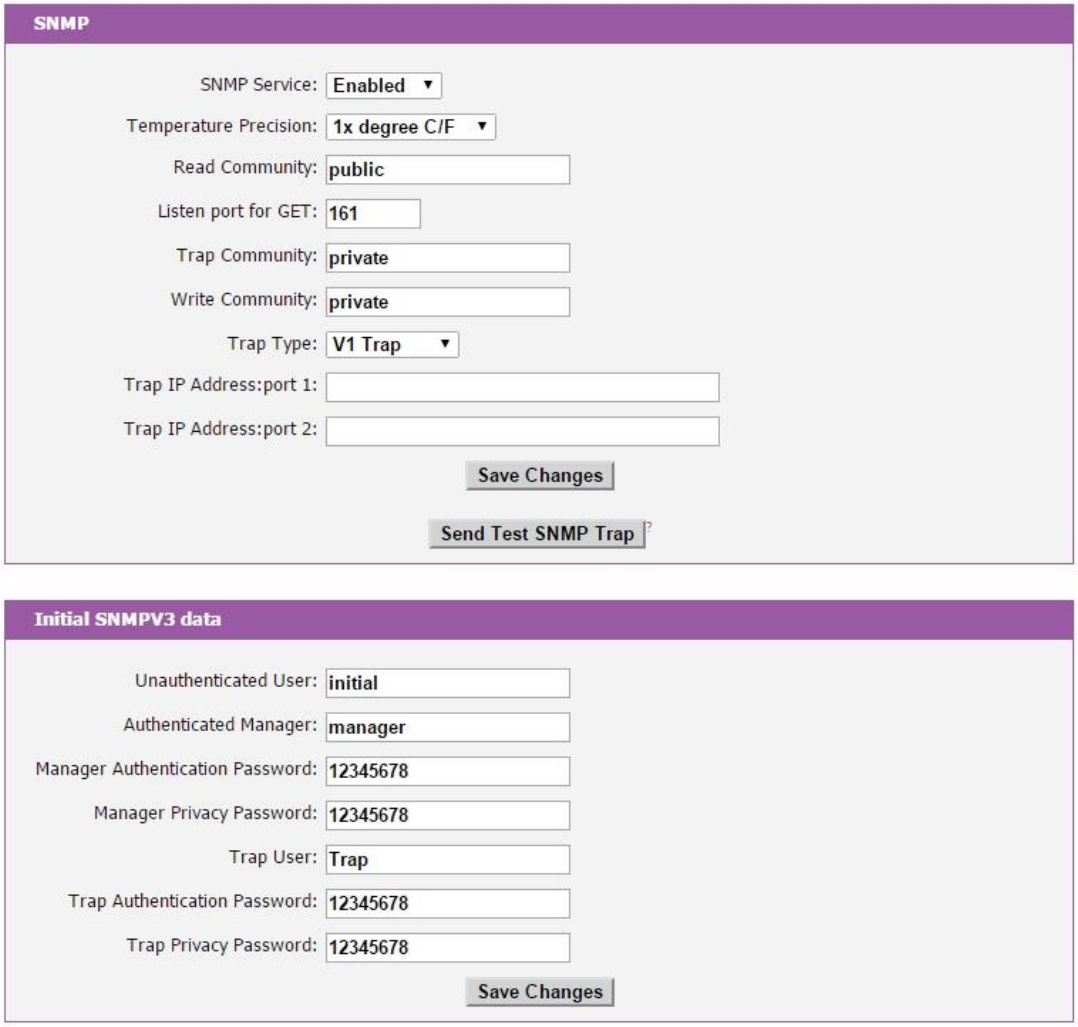

Figure 22: SNMP Configuration

The default community string is "public" and the MIB is downloadable via a link on the unit's web page.

Accounts and Passwords

Watchdog 1400 Series offer account security options that are entered on the *Admin* tab of the *Configuration* page. There are three levels of account security:

- **Administrator:** Password protects the Display, Alarms and Configuration pages.
- **Control Access:** Password protects the Control Actions and Control Settings pages.
- **View-Only:** Password protects the Sensors, PDA, WAP and XML pages.

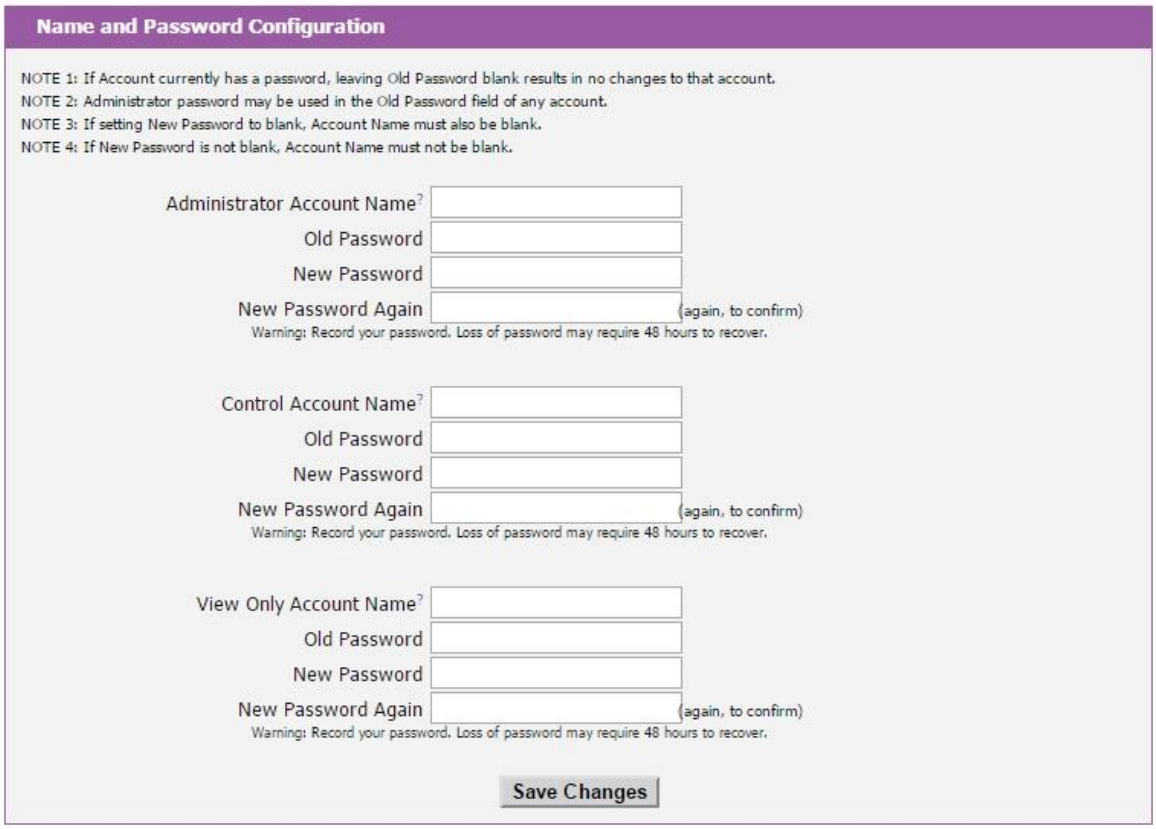

Figure 23: Account Configuration

User account names may include alphanumeric characters, spaces and underscores. Passwords may include alphanumeric characters and underscores.

Note: The Administrator account must be active to enable the Control Access and View-Only accounts.
Note: The Control Access account must be active to enable the View-Only account.
Note: The account names "root" and "admin" are disabled for security reasons and cannot be re-enabled.
Warning: Record your passwords. To reset lost passwords, follow the instructions for resetting the unit's IP address and passwords given in the Default IP Address section. To generate a temporary recovery password to access the unit, contact customer service from a location where the unit can be accessed via the Internet.

Telnet

The unit provides a Telnet server for basic monitoring via the command line. The Administrator account must be enabled to use the Telnet interface. Type "help" after logging in to the unit to see a list of available commands. The Telnet service can be disabled under "Web Server" on the *Network* tab of the *Configuration* page.

Note: All data sent via Telnet is unencrypted. Some settings can be changed and user names and network settings are available via Telnet. In secure environments, it is recommended that Telnet be disabled.

Camera Configuration

Enter the domain names/IP addresses and models of up to four IP-addressable network cameras in the "Cameras" section of the *Monitoring* tab on the *Configuration* page. The unit will present a linked snapshot from each camera on the *Sensors* page.

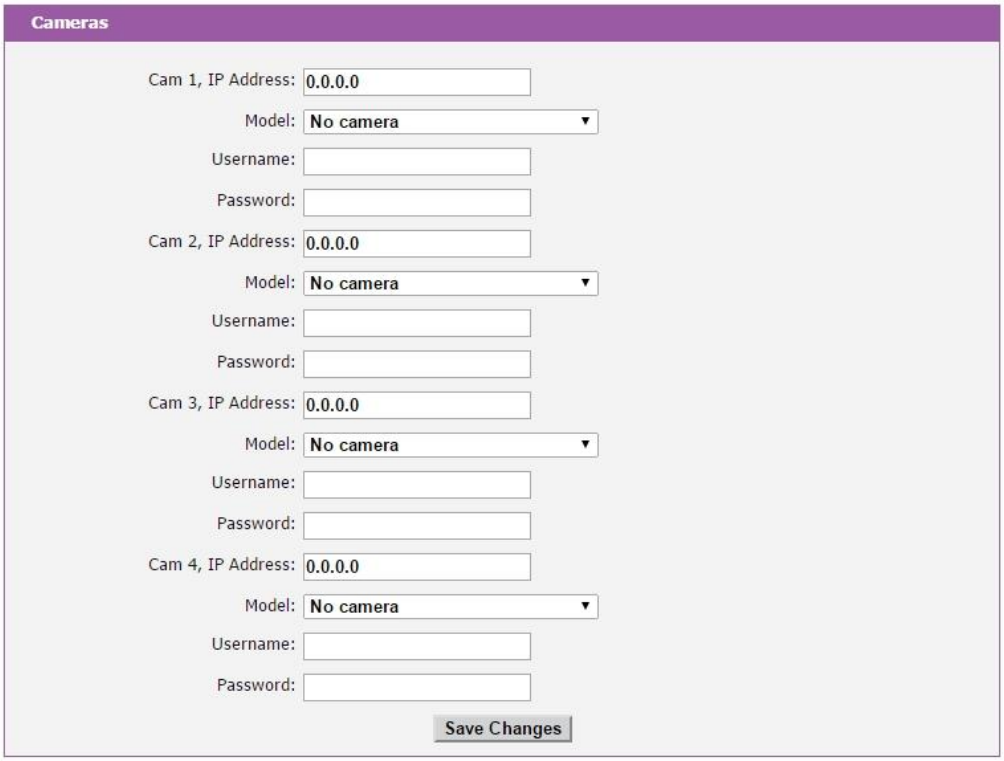

Figure 24: Configuration and Supported Models

Note: Each camera must be set to allow anonymous access to enable this feature.

Admin Information

Information entered in the "Admin Info" section of the *Admin* tab of the *Configuration* page will show up at the bottom of the unit's web interface.

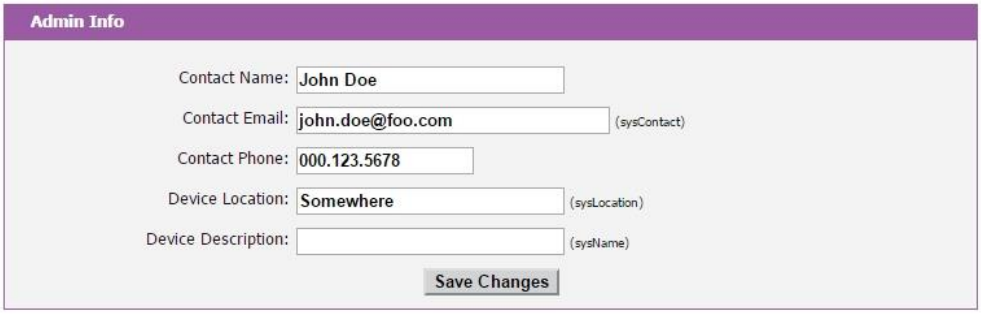

Figure 25: Admin Information Fields

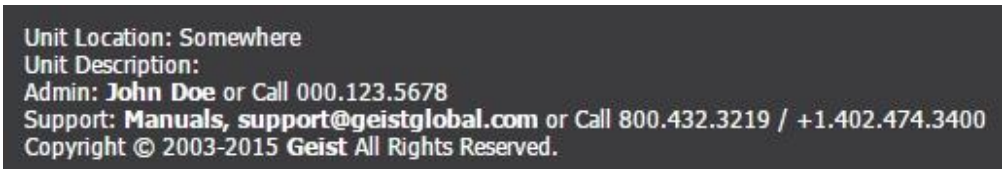

Figure 26: Admin Information Display

Output Relays

Relay Contact Ratings

The output relay contacts are intended to carry low voltage signals only. Do not exceed the following ratings on the output relay contacts:

DC: 60 V, 30 W

AC: 30 Vrms, 1 A

Relay Settings

The Watchdog 1400 Series units provide three output relays that can be operated remotely or set to automatically open or close based on alarm conditions. A relay in non-latching mode will automatically energize and de-energize as its associated alarms trip and clear. A relay in latching mode will similarly energize on an alarm trip, but will only de-energize when acknowledged by the user. See Alarms (page 28) for additional information on associating an alarm condition with one of the output relays.

Manual Override

The three output relays can be operated remotely through the Manual Override section of the *Control* page. The user can force the relay to energize or de-energize by selecting the desired action in a drop down menu and clicking the execute button. The current relay status is displayed in the Manual Override section of the *Control* page. The word "forced" is displayed next to any relay that has been manually forced to a given state. Any forced relay will not change state based on alarm status. Relays can be released from a forced energized or forced de-energized state by selecting the Release Override option in the drop down menu.

Acknowledgments

Any relay in latching mode will change from de-energized to energized if it receives an alarm trip; however, the relay will not change from energized to de-energized when the alarm status returns to normal until the user acknowledges the pending change. Similarly, any relay in latching mode will change from de-energized to energized if it receives a manual override Force Energized command; however, the relay will not change from energized to de-energized when the Release Override command is issued until the user acknowledges the pending change. The user must check the Acknowledge and De-energize box on the *Control* page for a latched relay to de-energize.

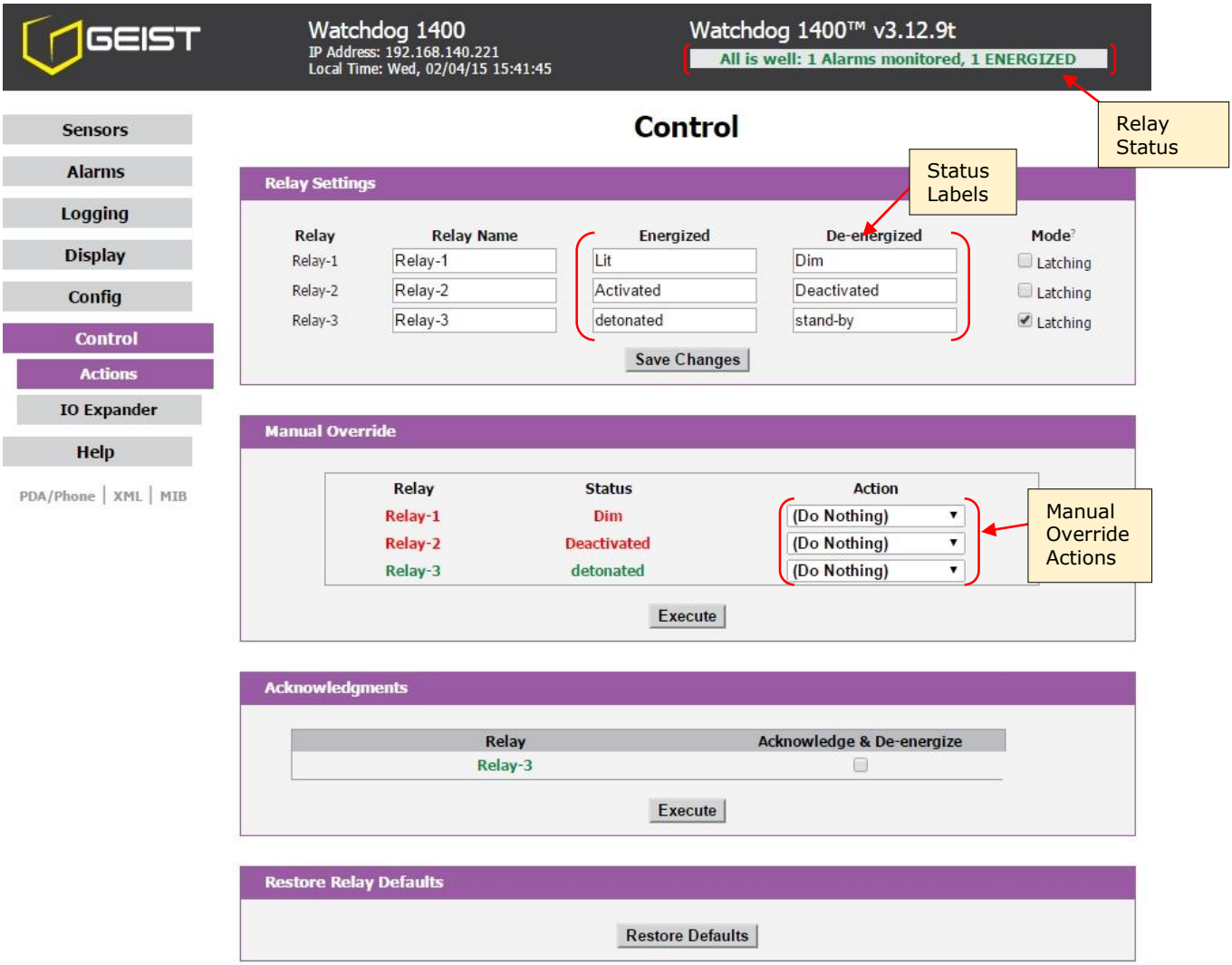

Figure 27: Relay Control Options

Alarms

Alarm Notifications

The Watchdog 1400 supports four types of alarm notification:

- **Relay:** The unit can be configured to energize up to three control relays
- **E-Mail:** The unit can be configured to send alarm e-mails to up to five recipients.
- **SNMP:** The unit can be configured to send SNMP traps to up to two trap servers.
- **Buzzer:** The unit supports an additional audible alarm notification.

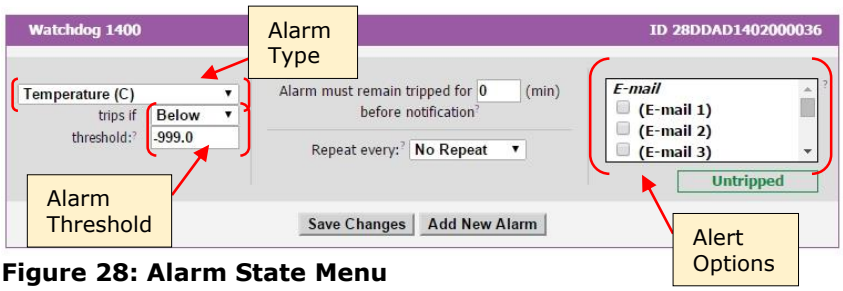

Figure 28: Alarm State Menu

The unit is capable of any combination of the above alarms at once. Alarm type combinations are selected per alarm via the check boxes which are displayed for each alarm on the Alarms page.

Alarm Types

The Watchdog 1400 provides three types of alarm messages via E-Mail and SNMP:

- **Trip:** Occurs when a sensor value goes above a high trip threshold or below a low trip threshold.
- **Clear:** Occurs when a sensor already in the Tripped or Unplugged state goes back into its normal range.
- **Unplugged:** Occurs when a sensor with an alarm set loses contact with the main unit due to the sensor being physically unplugged or another communications error.

Alarms can be added for each internal device or external sensor displayed on the Alarms page. An alarm is added by pressing the "Add New Alarm Button" and selecting the sensor value to be monitored from a drop down menu.

Thresholds

The user must set a trip threshold and type for each alarm that is added to the Alarms page. The threshold type is chosen as either "High Trip" or "Low Trip" from a drop down menu when the alarm is created. The threshold value is typed into a data window when the alarm is created. Alarms are triggered based on the selected sensor's data and the trip threshold type and value. Alarm settings can be edited or deleted at any time.

Analysis of each unit is recommended before setting alarm thresholds as some of the values monitored by the unit are relative values whose scale will differ slightly between units. Allow each unit to operate under normal, steady-state conditions for several hours before setting alarm thresholds. By allowing the sensors to operate for several hours, the user can better understand what the normal variations are; thereby allowing the user to choose alarm thresholds that will not trigger numerous false alarms.

Note: Changes in settings take a few moments to become active. Rapidly resetting alarm values may not provide the desired results. Allow up to 2 minutes after changing a setting before modifying it again.

Sensors

Overview

All internal sensors are measured every 5 seconds. External sensors are measured every 10 to 30 seconds, depending on the number of devices connected. Sensor data collected by Watchdog 1400 units provides useful trend analysis data. While all values are not absolute in relation to a known unit, trend analysis of the data allows users to view changes and draw useful conclusions about what is happening over time in the monitored environment.

Internal Sensors

Watchdog 1400 units contain the following onboard sensors:

- **Temperature:** Measures temperature and can be displayed in °C or °F. The accuracy is ±1 °F from -50 °F to 185 °F. Note: This sensor may be heated by internal circuitry in the unit; a temperature offset is available to re-calibrate.
- **IO-1:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.
- **IO-2:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.
- **IO-3:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.
- **IO-4:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.
- **IO-5:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.
- **IO-6:** Scales 0 to 5 Vdc input to a set Min and Max, dry contacts may be used.

I/O Sensors

The Watchdog 1400 units come equipped with six I/O ports for connecting additional external sensors such as Water and Door Sensors. The six ports are designed to accept a 0-5 Vdc analog input; alternatively, an internal 100K pull up resistor to 5 V allows for the use of dry contacts. The I/O port input is linearly converted to a digital number range between a set Minimum and Maximum (0 to 99 is Default) and is displayed on the *Sensors* page. Unused I/O ports will display the Max set value. Setting the Min, Max and Units will give the user more useful data depending on the sensor being used.

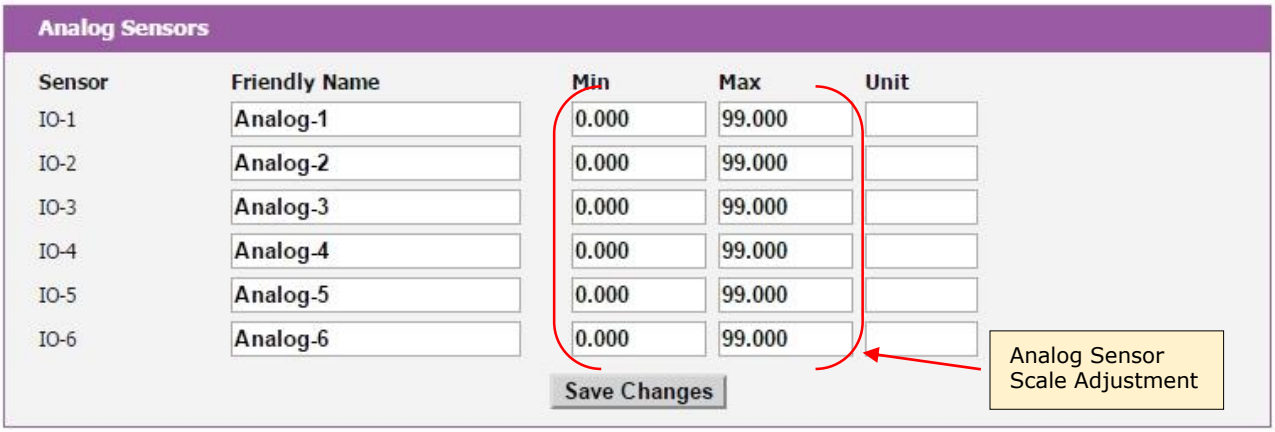

Figure 29: Analog Sensor Settings

Sensor Examples:

Water sensors act as conductivity bridges. Moisture across the contacts causes the value to drop. Door switches can be wired in a serial connection; if the chain is broken the entire group is classified as open. The limiting factor on the I/O ports is the length of the wire, found to be around 400 feet.

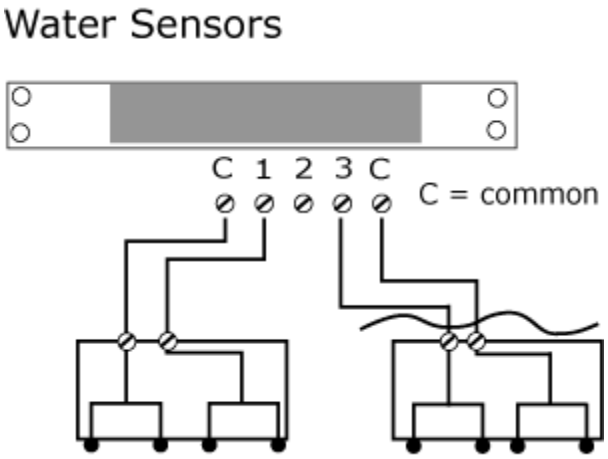

Figure 30: Water Sensor Wiring Example

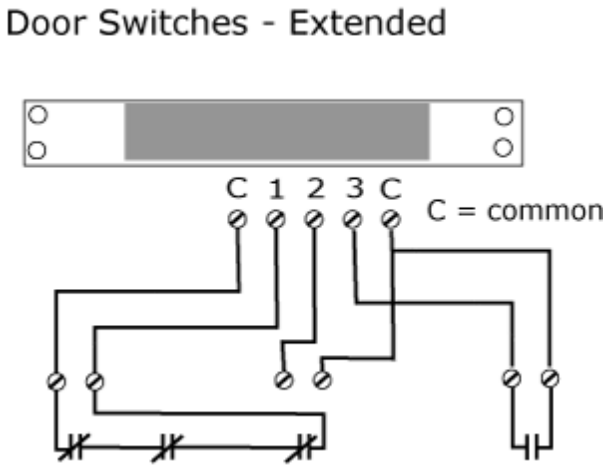

Figure 31: Door Sensor Wiring Example

Additional Optional I/O Sensors

- **RWS:** Water Sensor
- **RDPS:** Door Sensor
- **SA-1:** Smoke Alarm
- **RCP-2:** 125 V City Power Monitor
- **WSK-10:** 10’ Water Sensing Cable Kit
- **WSK-40:** 40’ Water Sensing Cable Kit
- **-48 VDCM:** Power Monitor
- **30 VDCM:** Power Monitor

Remote Sensors

Available Sensors

- **RT:** Temperature
- **THD:** Temperature / Humidity / Dew Point
- **T3HD:** Temperature / Humidity / Dew Point with ability to add two RT sensors
- **RTAFHD3:** Temperature / Air Flow / Humidity / Dew Point
- **CCAT:** Converts analog I/O Sensors to Remote Digital Sensors

*RTAF, RTAFH & RTHD sensors have been discontinued and replaced by the RTAFHD3 sensor. Some Geist R-Series devices may
require a firmware update to allow for proper compatibility with the new RTAFHD3 sensors.

If your Geist R-Series device is using firmware version 2.xx you will want to make sure you are using firmware version 2.94 or newer.

If your Geist R-Series device is using firmware version 3.xx you will want to make sure you are using firmware version 3.5.0 or newer.

Please contact Geist Support at 800-432-3219 if you need assistance locating your current version or upgrading to the new firmware version.

RTAFHD3 Compatibility

The (G)RTAFHD3 sensor cannot be utilized in combination with the discontinued (G)RTAF and (G)RTAFH sensors or (G)RTHD sensors built prior to 2010. If you desire to add (G)RTAFHD3 sensors to an existing installation currently utilizing incompatible sensors, please contact Customer Service for installation options.

Connecting Remote Sensors

Plug-and-play remote sensors may be attached to the unit at any time via the RJ-12 connectors on the face of the unit. In some cases splitters may be required to add additional sensors. Each sensor has a unique serial number and is automatically discovered and added to the web page. Up to sixteen sensors may be connected.

The display order of the sensors on the web page is determined by the serial number of each sensor. Friendly names for each sensor can be customized on the *Display* page.

Note: The sensor uses Cat. 3 wire and RJ12 connectors. Wiring must be straight-through: reverse polarity will temporarily disable all sensors until corrected.

Note: The sensors use a serial communication protocol and are subject to network signaling constraints dependent on shielding, environmental noise, and length of wire. Typical installations allow runs of up to 600 feet of sensor wire.

Data Logging and Display

All data collected by the unit can be graphed. The *Logging* page allows the user to select graphed content to be logged. Selected sensor values are logged into the data file at a rate of one point per minute and will be displayed on the unit's LCD display. The number of selected sensors determines the maximum data logging time span. This period is calculated and displayed on the *Logging* page. The oldest data will be deleted when the onboard memory fills up in order to make room for new data.

Accessories

IP-Addressable Network Cameras

The unit is able to interface with up to four IP-addressable network cameras. A live snapshot from each camera will be displayed on the unit's *Sensors* page underneath the main unit's graph. Clicking on a snapshot opens the camera's website in a new browser window.

Figure 32: Camera Images

Camera model and IP address are entered on the *Monitoring* tab of the *Configuration* page.

Note: Some cameras require additional software downloads to display live video in a web browser.

RSC Integration

For users with multiple units, Geist RSC software offers:

- Convenient, single-window monitoring of multiple units via simple web-based interface
- Streamlined firmware updating
- Consolidation of alarm settings

See http://www.geistglobal.com for more information.

Alternate Data Formats

In addition to the full access, control and configuration available via a desktop web browser, Watchdog 1400 Series products present data in multiple formats for easy integration with other monitoring systems. Data formats available via links on the unit's web page are:

Figure 33: Alternate Format Links

- **PDA/Phone:** Presents data in a format best-suited for PDA or cellular phone web browsers.
- **XML:** Extensible Markup Language. Presents data in a structured tree for use with automated scripts and monitoring systems.
- **MIB:** Management Information Base. Downloads the MIB for use with SNMP monitoring tools.

Technical Support

Firmware Version

The firmware version is located in the upper right section of the web interface header, represented by v3.y.xx. Before contacting support, it is recommended that the Watchdog 1400 unit first be updated to the latest firmware version. If this is not possible, please have the unit's existing firmware version number available when contacting technical support.

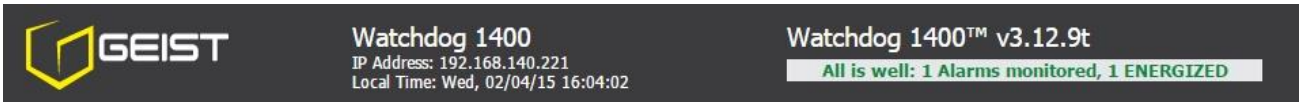

Figure 34: Web Page Header

Firmware Updates

Keep your unit updated with the latest firmware releases or sign up for notifications at the following website: http://www.geistglobal.com/support/monitor/firmware.

Resetting the Unit

Should the Watchdog 1400 unit loose communication; the processor may be manually rebooted by pressing the 'Reboot' button on the face of the unit. The web interface will remain off-line and any energized relays will be de-energized during boot up.

Service and Maintenance

No service or maintenance is required. Do not attempt to open the unit or you may void the warranty. No serviceable parts inside.

More Technical Support

http://www.geistglobal.com
(800) 432-3219
Email: support@geistglobal.com
Or contact your distributor.

Table of Figures

Revision History

Revision	Date	Notes	Approved By
1.0	10/20/2009	Initial Version	BGP, JP, AK
1.1	7/1/2010	Minor Text Edits	BGP
1.2	10/15/2010	RTAFHD3 Information Added	BGP
1.3	3/21/2011	Allow for only 6V DC power supply	CDG, BGP
1.4	4/27/2012	Added THD and T3HD	CG
1.5	6/7/2012	Logo and website update	CG
1.6	6/26/2013	Added 'G' to the product Number	SR
2.0	2/4/2015	Change product name, screenshots, and update product information	QN