



GEIST
COOL

ClosetAir Installation Manual



geistglobal.com



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Introduction

Welcome

Notice to Users

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Geist products adhere to the Buy American provisions of the American Recovery and Reinvestment Act of 2009 (Recovery Act). All Geist goods manufactured in our Lincoln, Nebraska, plant have undergone substantial transformation during production.

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Geist goods manufactured in our Lincoln, Nebraska, plant have undergone substantial transformation during production. These Geist products adhere to U.S. Trade Agreements Act and can be supplied for GSA Schedules and other government contracts.

Geist Policy on Conflict Minerals

This document details Geist's corporate policy regarding the use of conflict minerals. The policy expressed in this document should be considered to cover the Geist and Geist Europe divisions of PCE Inc.

Section 1502 of the Dodd-Frank Act which was passed by the US Congress in 2010 requires certain companies to annually disclose their use of conflict minerals. Conflict minerals covered under this act include tantalum, tin, tungsten, and gold.

Although Geist is not directly subjected to the requirements of the Dodd-Frank Act, Geist recognizes that all companies within the electronics manufacturing industry supply chain are impacted by this legislation. Geist supports the intent of the law, which is the reduction of violence within the Democratic Republic of the Congo and will take several actions to both advance the goals of the Dodd-Frank Act and to provide exceptional support to our customers.

- Geist will work with our direct suppliers to identify purchased components and materials that contain tin, tantalum, tungsten or gold.
- Geist will work with our direct suppliers to trace sources of any tin, tantalum, tungsten or gold used in our products back to the smelter.
- Geist will document our efforts to trace tin, tantalum, tungsten, and gold minerals back to the smelter and will accurately report the results to our customers.
- Geist will continue to monitor industry progress in identifying conflict-free smelters and will adjust corporate policy as the electronics supply chain becomes more fully documented.

Geist will not require that our direct suppliers source only conflict-free minerals until an adequate number of smelters has been reliably identified and audited by The Electronic Industry Citizenship Coalition (EICC) and the Global e-Sustainability Initiative (GeSI) to service the electronic industry supply chain. Mandating a conflict-free supply chain before an adequate number of smelters has been identified will prohibit the use of all tin, tantalum, tungsten, and gold originating in the Democratic Republic of the Congo and surrounding countries. This prohibition would cut off the sole income source for many artisanal miners within the region and may result in increased violence within the Democratic Republic of the Congo in direct opposition to the goals of the Dodd-Frank Act. Geist will work continuously with our direct suppliers in order to annually increase the percentage of documented conflict-free minerals that are used in our products until all products can be certified as conflict-free.

WEEE Declaration

Geist Europe is obligated to finance the cost of the collection, treatment, recovery and environmentally sound disposal of all products sold by Geist Europe into the UK market this includes:

- New WEEE (displaying 'the crossed out wheeled bin symbol') that Geist Europe has placed onto the market after the 13th August 2005.
- Historic WEEE (not displaying 'the crossed out wheeled bin symbol'), when Geist Europe is supplying new WEEE that is intended to replace the historic WEEE and is of equivalent type or fulfills the same function even if the historic WEEE was manufactured by a third party.

Please contact Geist Europe on 01823 275100 for further details or to arrange collection.
(UK Only)

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Rev 06/30/2017

About this Manual

This document provides an overview of Geist product(s), the major topics covered include:

- Copyright, Trademarks, and Disclosure Restrictions.
- Instructions for installing, powering and using the equipment.
- Information that will aid in managing and maintaining the equipment.

Revision History

Revision	Date	Notes	Approved By
0.0	4/27/2013	Original Published Version	JB
1.0	6/18/2013	Updated Geist Branding	JB
2.0	3/11/2015	Updated ClosetAir Features	JB
3.0	10/27/2016	Updated Format	JB
3.1	7/11/2017	Updated Information	JB

Organization of the Manual

This Geist document contains the following product information:

- Product Specifications - This chapter describes the major product characteristics and its functional role within the system. Where appropriate, reference to cabling among product components and to other Geist product(s) is provided.
- Pre-Installation - This chapter provides pre-installation information for the preparation and use of Geist product(s). Subjects discussed in this chapter must be considered prior to performing the installation of the Geist product.
- Installation - This chapter provides procedures required to adequately mechanically and electrically attach Geist product into supporting systems.
- Final Checkout - The final checkout/power-up procedures after product installation are provided in this chapter. The procedures in this chapter provide for an orderly system power-up sequence and ensure proper operation of this product.

Audience Profile

This document is intended for use by authorized technicians experienced with some of similar product types and for personnel requiring guidance for equipment installation, operation, maintenance, and support.

On-line Documentation

This document is available on-line and within the corresponding [Geist Product Manuals](#). Additional Geist product supporting [Videos](#), [Product Literature](#) and [Case Studies](#) can be found on the [Geist Resource](#) page.

Product firmware updates can be found and downloaded from the [Geist Support](#) site, under [Firmware Updates](#).

Should this product fail within its warranty period and be in need of repair or replacement, a Return Material Authorization may be obtained on-line from the [RMA Form](#) link located within the [Geist Support](#) site.

Reporting Document Errors

Should you discover any error or identify a deficiency in this document, please take time to contact us at the following email address:

Geist-Documents@geistglobal.com

Please be sure to provide us with the document name, part number, and page number(s). Also please provide us with description of the error or the deficiency for the document. If you would like for us to contact you, please provide us with your name and contact information.

Thank you for your time. We appreciate any comments and feedback you can provide.

Conventions

The information contained within this document is established around the framework of various conventions, which are defined as follows:

Software

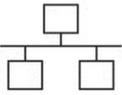
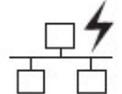
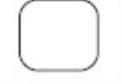
- Release Management: Product name, Version control ; (GU V 3.0.0)
 - Product Name: Name of Hardware Platform
 - Version control: V(ersion) Platform #, Major #, Minor #

Hardware

Product Classification

- Power Distribution Unit
 - Basic
 - Monitored only
 - Switched only
 - Monitored + Switched
- Environmental Monitoring
- Cooling
- Data Center Infrastructure Management (DCIM)

Figure 1 Overlay Symbology Guide

	Ethernet		Activity / Idle
	Power over Ethernet		Power
	Serial		Amps
	Remote Display		Reboot
	Remote Sensors		Silence
	Uplink		Scroll
	Temp		GU Right
	Sensor Configuration		GU Left
		GU Center	

The chart above depicts the symbols used on Geist overlays.

Safety

This document contains varying levels of alerts pertaining to product and user safety. The alerts are visually presented with graphics and text per Geist equipment guidelines.

The representations are:



DANGER

INDICATES AN **IMMINENT** HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN **DEATH OR SERIOUS INJURY**.



WARNING

INDICATES A **POTENTIAL** HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN **DEATH OR SERIOUS INJURY**.



CAUTION

INDICATES A **POTENTIAL** HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN **PRODUCT DAMAGE AND MINOR TO MODERATE INJURY**.



NOTE

Provides useful information that is beneficial for operation and usage of this product.

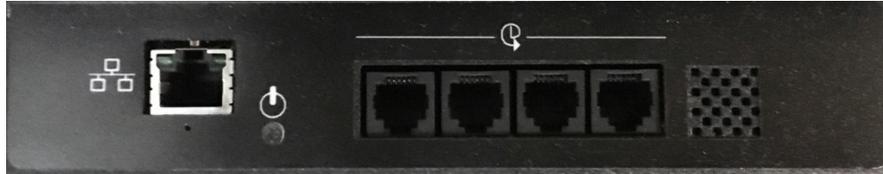
Figures

Figures presented in this document are identified and designated as follows:

'Figure:', Chapter # - Image #

Example:

Figure 1-1 Name and/or Title goes here



Tables

Tables presented in this document are identified and designated as follows:

'Table:', Chapter # - Image #

Example:

Table 1-1 Name and/or Title goes here

Column 1	Column 2	Column 3	Column 4	Column 5
Text	Text	Text	Text	Text
Text	Text	Text	Text	Text
Text	Text	Text	Text	Text
Text	Text	Text	Text	Text

Chapter 1 - Product Specifications

Overview

The RAC10 system evacuates heat load from a small space and sends it to the outside corridor or ceiling plenum return. The RAC10 system provides control and monitoring via a built-in web server. Web pages and graphs, generated by the RAC10, are used to monitor environmental conditions and unit settings. No software other than a web browser is required for operation and several data formats are available. The RAC10 system includes one internal temperature sensor, two external temperature sensors, and ports for two additional (optional) external temperature sensors.

Environmental

The operational environmental limits pertaining to Temperature, Humidity, and Elevation are as defined below:

Temperature

Table 1-1 Temperature Limits

	Minimum	Maximum
Operating	10°C (50°F)	45°C (113°F)
Storage	-25°C (13°F)	65°C (149°F)

Humidity

Table 1-2 Humidity Limits

	Minimum	Maximum
Operating	5%	95% (non-condensing)
Storage	5%	95% (non-condensing)

Elevation

Table 1-3 Elevation Limits

	Minimum	Maximum
Operating	0 m (0 ft)	2,000 m (6,561 ft)
Storage	0 m (0 ft)	15,240 m (50,000 ft)

Electrical

Electrical product characteristics and performance are defined below. Also please see the product nameplate for additional rating limits.

Electrical Specifications

The ClosetAir RAC10 operates with power inputs as shown in the following table.

Table 1-4 Electrical Specs

Input	Specifications
Input Power	120 Volt, 60 Hz
Input Sources	1

Networking

The product communications requirements are identified below.

Ethernet

The Ethernet link speed for this product is: 10 Mb; half-duplex.

Protocols

The communications protocols supported by this product include:

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

Regulatory Compliance

Geist products are regulated for Safety, Emissions, and Environment Impact per the below agencies and policies.

Underwriters Laboratories (UL)

UL Standards are used to assess products; test components, materials, systems and performance; and evaluate environmentally sustainable products, renewable energies, food and water products, recycling systems and other innovative technologies. The UL standards specific to this equipment are: UL 507, cUL 507.

Federal Communications Commission (FCC)

The Federal Communications Commission (FCC) regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia and U.S. territories. An independent U.S. government agency overseen by Congress, the commission is the United States' primary authority for communications laws, regulation and technological innovation.

The FCC standards specific to this equipment are:

FCC Part 15 Class A

Chapter 2 - Pre-Installation

The RAC10 relies on the building installation for protection from overcurrent. A Listed circuit breaker is required in the building installation. The circuit breaker should be rated at 15 or 20 Amps. Install the RAC10 so the input plug may be disconnected for service.

Installation:

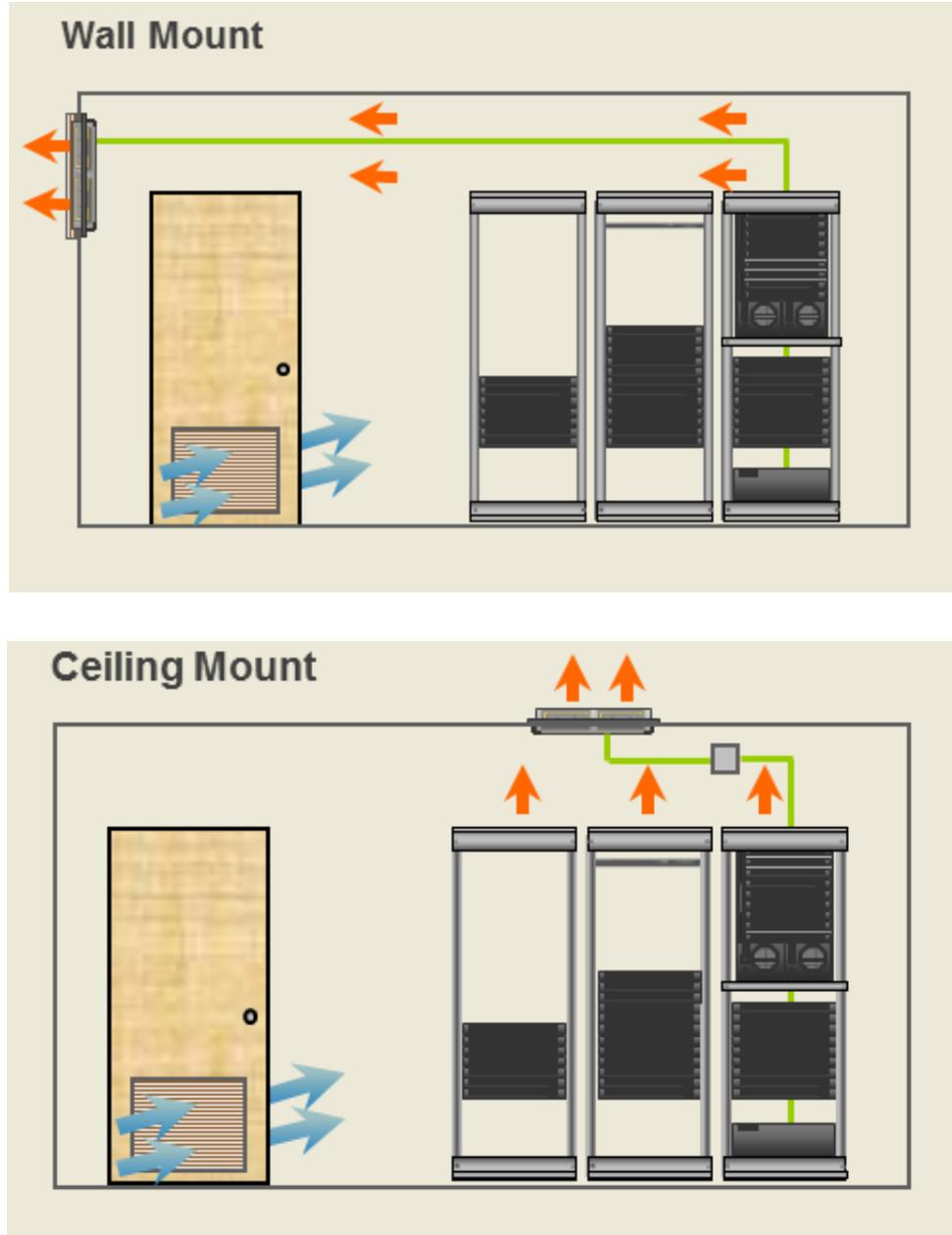
1. Using appropriate hardware, mount unit into wall or dropped ceiling as detailed in the Mounting Requirements Section of Instruction Manual.
2. Plug RAC10 into appropriately rated and protected branch circuit receptacle.

Service and Maintenance:

No service or maintenance is required. Do not attempt to open the RAC10 or you may void the warranty. No serviceable parts inside.

Two Installation Options

Figure 2-1 Installation Options



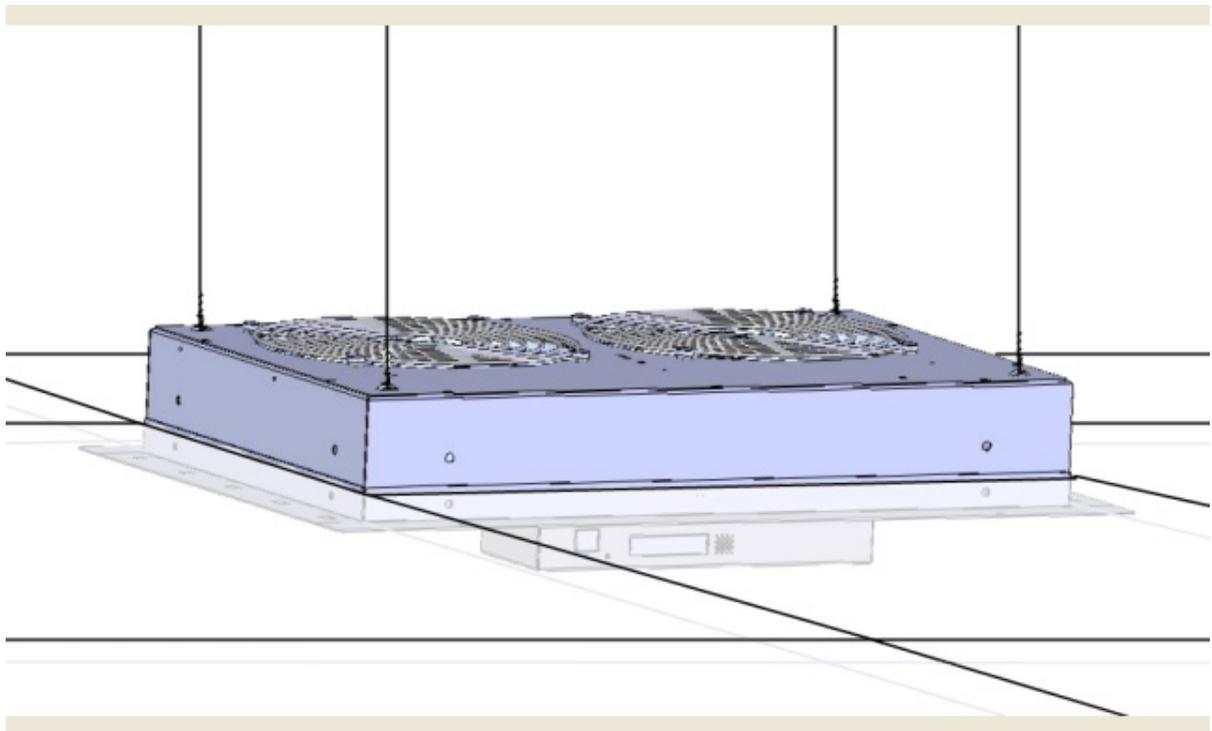
Wall or ceiling mount for automated heat exhaust and critical monitoring / alerts.

Mounting Requirements

Drop-Ceiling Mount

1. Must use 16 or heavier gauge drop-ceiling hanger wire.
2. Attach to unit through four eyelets on top of unit as shown in Figure 1.
3. Supplying power receptacle must be below drop ceiling to keep power cord out of plenum space.
4. Optional RAC-D002 duct kit may be used for interfacing to existing duct work.

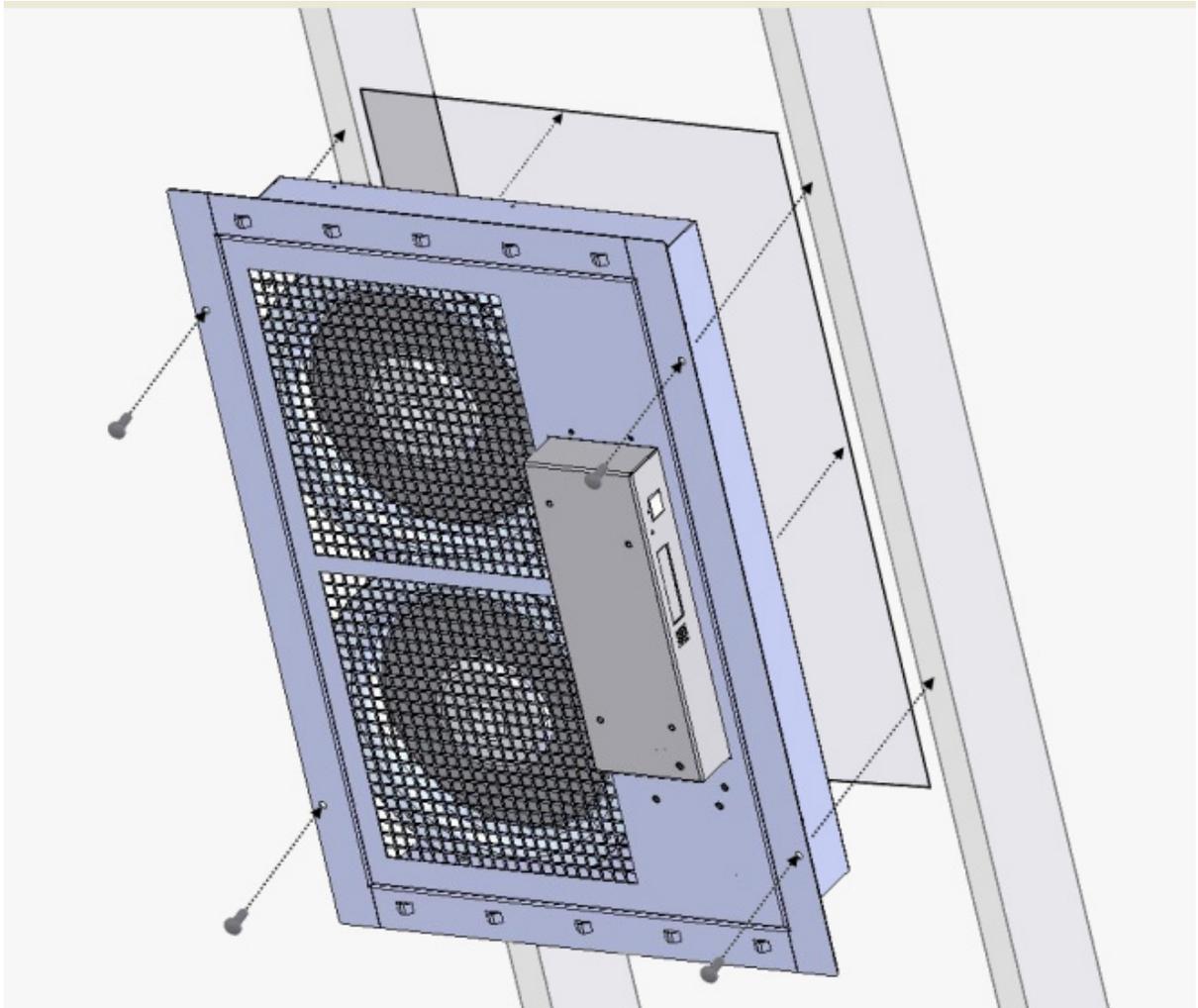
Figure 2-2 Drop Ceiling Mount Option



Wall Mount

1. Mount to wood studs, spaced 16" apart.
2. Must use 2" length, #10 wood screws into studs as shown in Figure #2.

Figure 2-3 Wall Mount Option



Initial Setup

Install a CAT5 Ethernet cable between the RAC10 and the computer being used for device configuration. If connecting directly to the RAC10 and not going through a hub, switch, or router, a crossover cable may be required.

Data Formats

HTML, SNMP, CSV/Plain Text, XML.

Accessing Web Server

Default IP Address

The RAC10 has a default IP address for initial setup and access to the unit if the assigned address is lost or forgotten.

IP Address: 192.168.123.123

Subnet Mask: 255.255.255.0

Gateway: 192.168.123.1

Reset to factory default IP address procedure

To restore the default IP address, press and hold the reset button located below the network connector for 20 seconds. The reset button is accessed through the white, circular hole located below the Ethernet jack.

Using a probe (even a medium size paper clip, straightened) place through the hole below the Ethernet jack (RJ45) to locate the soft feel push switch on the circuit board. You should be able to feel a slight click when you have it depressed.

Once the unit has rebooted, you will be able to connect (via crossover cable) using IP address 192.168.123.123, the factory default. Now you can set up all parameters as detailed in Unit Configuration.

	<p>NOTE</p> <p>Pressing the reset button under the network connector will restore the default IP address and will also clear all password settings.</p>
---	--

Windows

- **Windows 2000 / XP / Server 2003:**

Click the **Start** button, choose **Settings**, then **Network Connections**.

- **Windows 7 / Server 2008:**

Click the **Start** button, then choose **Control Panel >> Adjust Your Computer's Settings >> View Network Status and Tasks >> Change Adapter Settings**.

(Alternatively, on some Windows 7 machines, this may be **Start**, then **Settings >> Control Panel >> Network and Sharing Center >> Change Adapter Settings**.)

- **Windows 8 / Server 2012:**

Move the mouse cursor to the bottom or top right corner of the screen, click the **Settings** icon, then select **Control Panel**. Change the view type from **Category** to **Large** or **Small Icons** if necessary, then select **Network and Sharing Center**, then **Change Adapter Settings**.

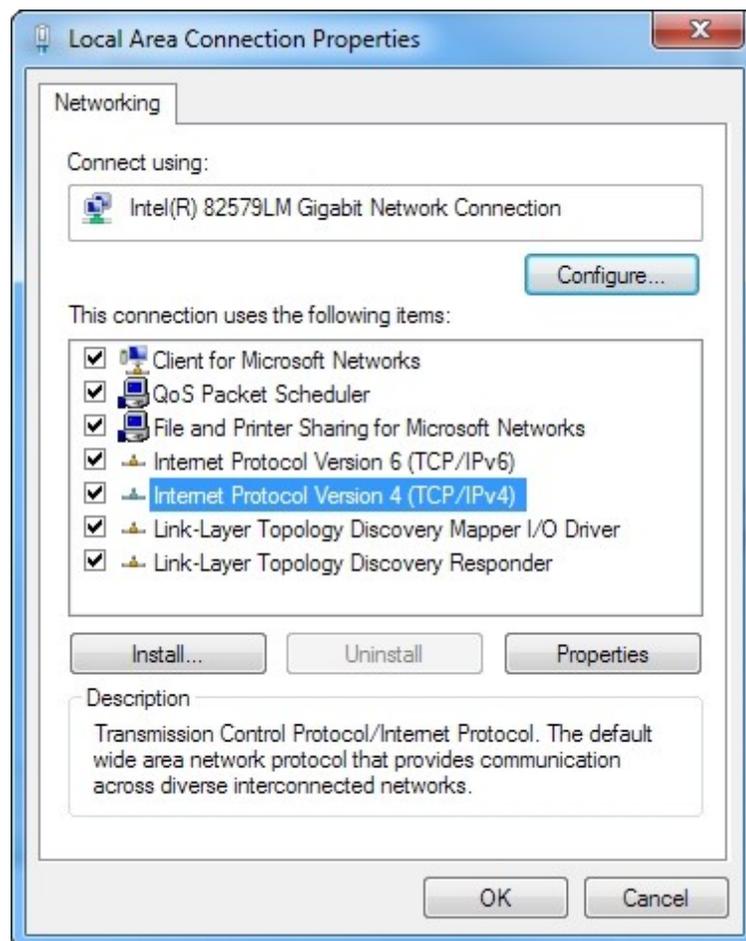
- **Windows 10:**

Click the **Start** button, then choose **Network & Internet**, then click **Change adapter options**.

Locate the entry under **LAN or High-Speed Internet** or **Local Area Connection** which corresponds to the network card (NIC) which the unit is connected to. (Note: Most computers will only have a single Ethernet NIC installed, but a WiFi or 3G adapter will also show as a NIC in this list, so be sure to choose the correct entry.)

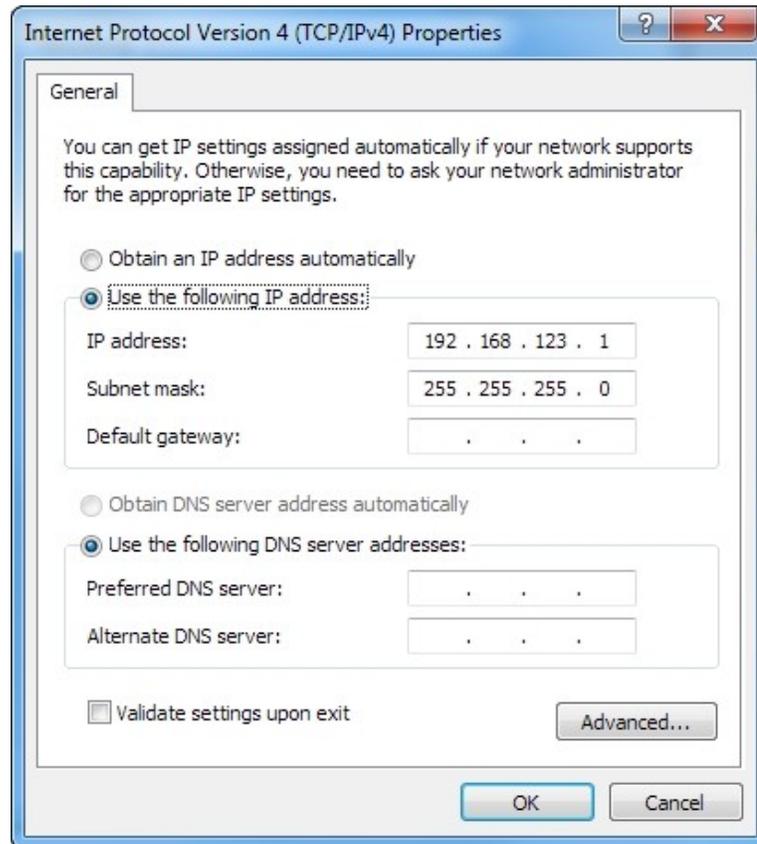
Double-click on the network adapter's entry in the **Network Connections** list to open its status dialog box, then click the **Properties** button to open the **Local Properties** window.

Figure 2-4 Windows Network Settings



Find the entry titled "**Internet Protocol Version 4 (TCP/IPv4)**" in the list, then click the **Properties** button to open the **Internet Protocol Properties** window. If you see more than one TCP/IP entry, as in the example above, the computer may be configured for IPv6 support as well as IPv4; make sure to select the entry for the IPv4 protocol.

Figure 2-5 Windows TCP/IPv4 Settings



Choose the **Use the following IP address** option, then set **IP address** to 192.168.123.1 and **Subnet Mask** to 255.255.255.0. For this initial setup, **Default Gateway** and the **DNS Server** entries can be left blank. Select **OK**, then **OK** again to close both the **Internet Protocol Properties** and **Local Properties** windows.

Once the NIC settings are configured properly, you should be able to access the unit by typing `http://192.168.123.123` into the address bar of your web browser. If you are setting up the unit for the first time, or if the unit has been reset back to factory defaults via the network-reset button, the unit will require you to create an Admin account and password before you can proceed.

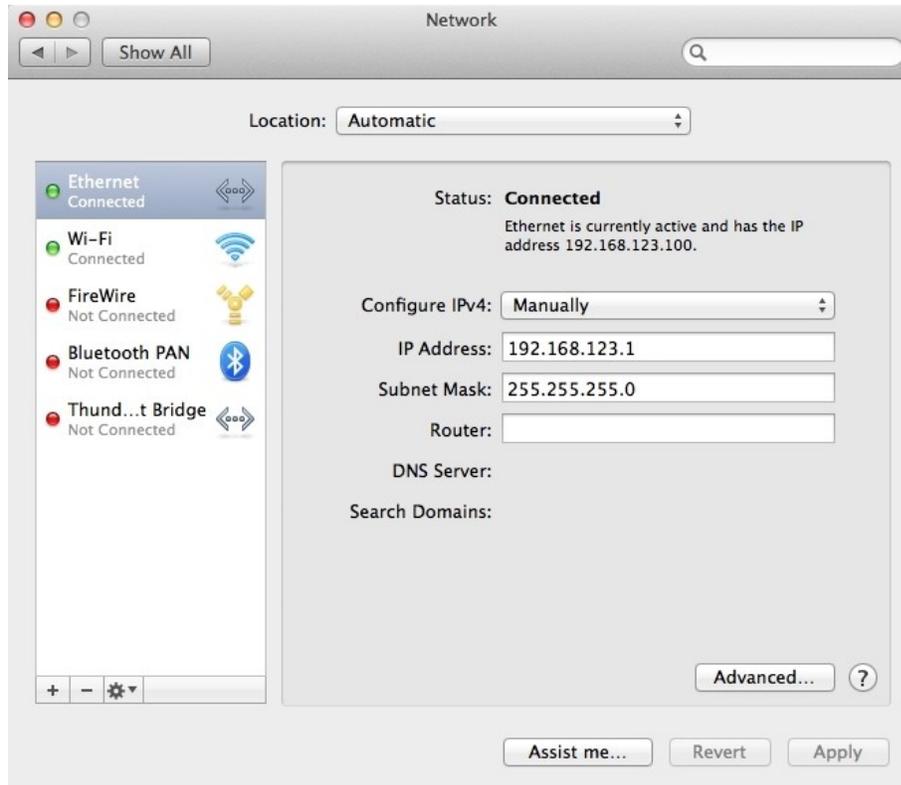
Once you have created the Admin account and logged into it, the unit's default **Sensors** page should come up by default. Navigate to the **System** tab, then the **Network** page to configure the device's network properties. The unit's IP Address, Subnet Mask, Gateway, and DNS settings can either be assigned manually, or acquired via DHCP.

Note that the new settings will take effect instantly when the **Save** button is clicked, so the browser will no longer be able to reload the web page from the 192.168.123.123 address and will probably display a "page not found" or "host unavailable" message. This behavior is normal. Once you have finished configuring the unit's IP address, simply repeat the steps above, and change the computer's Ethernet NIC card settings back to the ones you wrote down prior to changing them, to restore its normal network and internet settings.

Mac

Click the **System Preferences** icon on the Dock, and choose **Network**.

Figure 2-6 Mac Network Settings



Be sure **Ethernet** is highlighted on the left side of the NIC window. (In most cases, there will only be one Ethernet entry on a Mac.)

Select **Manually** from the **Configure IPv4** drop-down list, then set **IP Address** to 192.168.123.1 and **Subnet Mask** to 255.255.255.0. (The **Router** and **DNS Server** settings can be left blank for this initial setup.) Click **Apply** when finished.

Once the NIC settings are configured properly, you should be able to access the unit by typing `http://192.168.123.123` into the address bar of your web browser. If you are setting up the unit for the first time, or if the unit has been reset back to factory defaults via the network-reset button, the unit will require you to create an Admin account and password before you can proceed.

Once you have created the Admin account and logged into it, the unit's default **Sensors** page should come up by default. Navigate to the **System** tab, then the **Network** page to configure the device's network properties. The unit's IP Address, Subnet Mask, Gateway, and DNS settings can either be assigned manually, or acquired via DHCP.

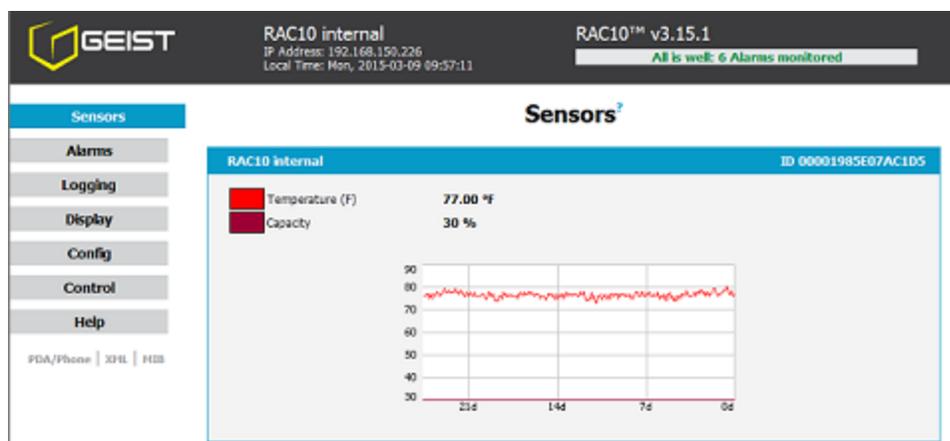
Note that the new settings will take effect instantly when the **Save** button is clicked, so the browser will no longer be able to reload the web page from the 192.168.123.123 address and will probably display a "page not found" or "host unavailable" message. This behavior is normal. Once you have finished configuring the unit's IP address, simply repeat the steps above, and change the computer's Ethernet NIC card settings back to the ones you wrote down prior to changing them, to restore its normal network and internet settings.

Chapter 3 - Installation

Sensors

The front page, Sensors, gives both instantaneous and historical views of the unit's data. Real time readings are provided for all data next to historical graphs. Optional cameras may be added and their live snapshots are shown on this page. Plug-and-play external temperature sensors appear on this page when installed. The menu bar allows access to the rest of the RAC's functionality. The internal temperature sensor is measured every 5 seconds. External sensors are measured at approximately the same rate, depending on the number (1-4) of devices connected. Sensor data collected by the Fan Controller gives useful trend analysis data that allows users to view changes and draw useful conclusions about what is happening over time in the monitored environment.

Figure 3-1 Sensors Page



Items Displayed on Sensors Page

The RAC will display the following items on the Sensors page:

Figure 3-2 Sensors Page Items



- **Set Point Temp:** Displays the desired temperature set by the user.
- **Internal Temp:** Displays measured temperature inside the unit in °C or °F.
- **Temp 1:** Displays temperature measured by external sensor in °C or °F. This value will read 0 °C or 32 °F until and external temperature sensor is connected.
- **Temp 2:** Displays temperature measured by external sensor in °C or °F. This value will read 0 °C or 32 °F until and external temperature sensor is connected.
- **Temp 3:** Displays temperature measured by external sensor in °C or °F. This value will read 0 °C or 32 °F until and external temperature sensor is connected.
- **Temp 4:** Displays temperature measured by external sensor in °C or °F. This value will read 0 °C or 32 °F until and external temperature sensor is connected.
- **Capacity:** Percent, from 30-100 of maximum fan speed. 0 may be selected to disable the fans if needed.

Alarms

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. Alarm options include time tripped before notification, a repeat cycle, Email and SNMP Trap. There is also a provision to notify if a sensor is unplugged.

Figure 3-3 Alarms Page

The screenshot displays the GEIST RAC10 Alarms configuration interface. At the top, the system status shows 'All is well: 2 Alarms monitored'. The left sidebar contains navigation options: Sensors, Alarms, Logging, Display, Config, Control, and Help. The main content area is titled 'Alarms' and lists three sensors:

- RAC10 (ID 00001985E3BB2775):** Capacity sensor. Trip threshold is 90.0 (Above). Alarm must remain tripped for 0 minutes before notification. Repeat every: No Repeat. E-mail notifications are configured for (E-mail 1), (E-mail 2), and (E-mail 3). Status: Untripped.
- Temp Sensor (ID 4100000612C29828):** Temperature (F) sensor. Trip threshold is 90.0 (Above). Alarm must remain tripped for 0 minutes before notification. Repeat every: No Repeat. E-mail notifications are configured for (E-mail 1), (E-mail 2), and (E-mail 3). Status: Untripped.
- Temp Sensor (ID 5200000613199E28):** No specific configuration details are visible for this sensor.

Below the sensors is the **Alarm Behavior** section, where 'Unplugged Alerts' are set to 'Enabled'. At the bottom, there are language selection options (English, Français, 中文, Deutsch, 日本語, Español) and contact information for support.

Alarm Types

The RAC provides three types of alarm messages via email 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.

Figure 3-4 Alarms Types

RAC10 internal		ID 00001985E07AC1D5
Temperature (F) trips if Above threshold: 90.0	Alarm must remain tripped for 2 (min) before notification?	<i>E-mail</i> <input type="checkbox"/> (E-mail 1) <input checked="" type="checkbox"/> rs8546@hotmail.com <input type="checkbox"/> (E-mail 3)
Repeat every: 10 min		Untripped
<input type="button" value="Save Changes"/> <input type="button" value="Add New Alarm"/>		
Temp Sensor 1		ID 770000011319A828
Temperature (C) trips if Below threshold: -999.0	Alarm must remain tripped for 0 (min) before notification?	<i>E-mail</i> <input type="checkbox"/> (E-mail 1) <input type="checkbox"/> rs8546@hotmail.com <input type="checkbox"/> (E-mail 3)
Repeat every: No Repeat		Untripped
<input type="button" value="Save Changes"/> <input type="button" value="Add New Alarm"/>		
Temp Sensor 2		ID 55000000C42F0528
<input type="button" value="Add New Alarm"/>		

Alarms can be added for set point, fan speed, and internal or external temperature sensors 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.

Alarm Notifications

The RAC10 supports two types of alarm notification:

- **Email:** The unit can be configured to send alarm emails to up to five recipients.
- **SNMP:** The unit can be configured to send SNMP traps to up to two trap servers.

Figure 3-5 Alarm Notifications

The screenshot shows the RAC10 web interface with the following details:

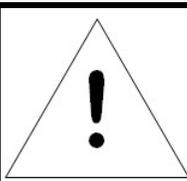
- Header:** GEIST logo, RAC10, IP Address: 192.168.123.123, Local Time: Mon, 03/09/15 11:06:10, RAC10™ v3.15.1, All is well: 2 Alarms monitored.
- Navigation:** Sensors, Alarms (selected), Logging, Display, Config, Control, Help.
- Capacity Alarm (ID 00001985E3BB2775):** Capacity sensor, trips if Above, threshold 90.0, Alarm must remain tripped for 0 (min) before notification, Repeat every: No Repeat, E-mail recipients: (E-mail 1), (E-mail 2), (E-mail 3), Untripped.
- Temp Sensor Alarm (ID 4100000612C29828):** Temperature (F) sensor, trips if Above, threshold 90.0, Alarm must remain tripped for 0 (min) before notification, Repeat every: No Repeat, E-mail recipients: (E-mail 1), (E-mail 2), (E-mail 3), Untripped.
- Temp Sensor Alarm (ID 5200000613199E28):** Add New Alarm button.
- Alarm Behavior:** Unplugged Alerts: Enabled, Save Changes button.
- Footer:** English | Français | 中文 | Deutsch | 日本語 | Español, Unit Location, Unit Description, Admin: or Call, Support: Manuals, support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400, Copyright © 2003-2015 Geist All Rights Reserved.

The RAC 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.

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.

Alternate Data Formats

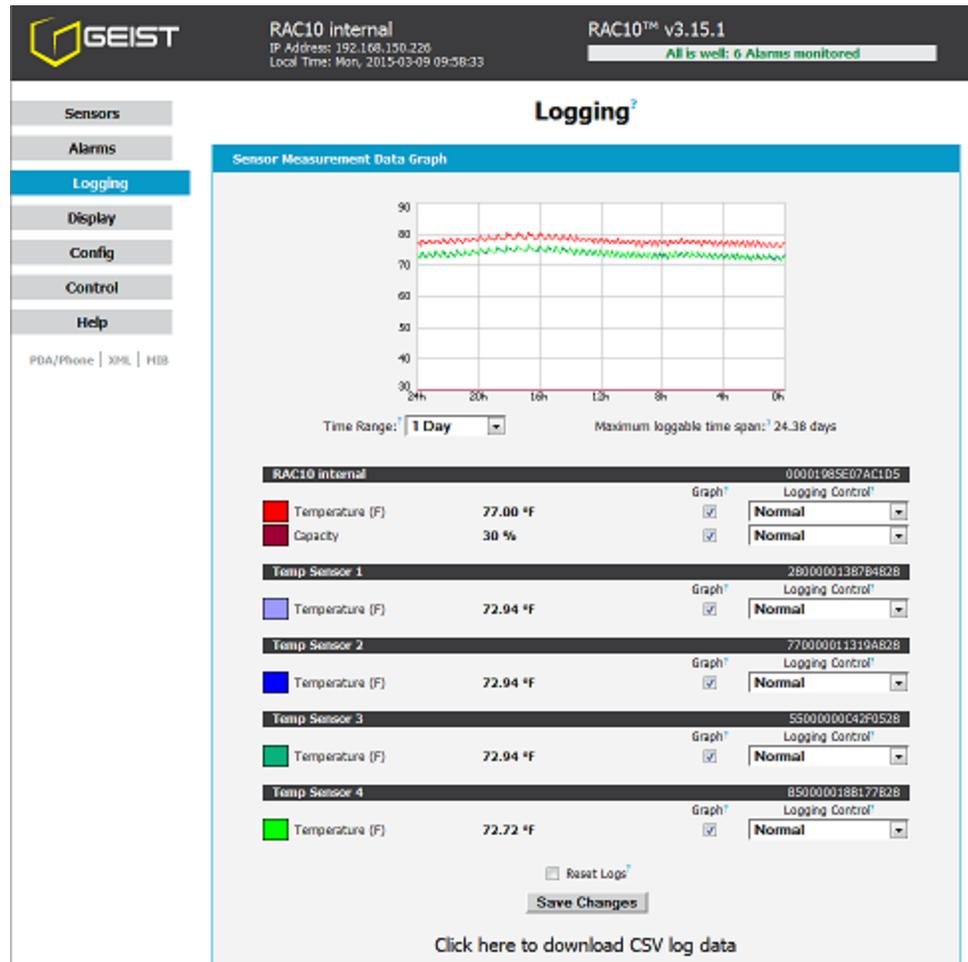
In addition to the full access, control and configuration available via a desktop web browser, the RAC10 System presents data in multiple formats for easy integration with other monitoring systems. Data formats available via links on the unit’s web page are:

- **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.

Logging

The Logging page allows the user to access the historical data by selecting the desired sensors and time range to be graphed. Selected sensor values are logged into the data file at a rate of one point per minute. Recorded data is available for download in a comma-separated values (CSV) file.

Figure 3-6 Logging Page



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. 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.

Display

The Display page allows the user to assign a friendly name to the Fan Controller as well as change the default temperature unit of measure for internal and external 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 3-7 Display Page

The screenshot shows the GEIST RAC10 internal web interface. The top header includes the GEIST logo, the unit name 'RAC10 internal', IP address '192.168.1.50.226', local time 'Mon, 2015-03-09 09:59:15', and the version 'RAC10™ v3.15.1'. A status bar indicates 'All is well: 6 Alarms monitored'. A vertical menu on the left lists 'Sensors', 'Alarms', 'Logging', 'Display' (selected), 'Config', 'Control', and 'Help'. The main content area is titled 'Display' and contains two sections: 'General' and 'Devices'.

General

Default Language:

Date Format:

Temperature Unit:

Internal Temperature Offset:

Interface Type:

Devices

Unique Address	Device Type	Friendly Name
00001985E07AC1D5	sc10	RAC10 internal
28000001387B4828	tempSensor	Temp Sensor 1
770000011319A828	tempSensor	Temp Sensor 2
55000000C42F0528	tempSensor	Temp Sensor 3
850000018B177828	tempSensor	Temp Sensor 4

Remove all unplugged devices

English | Français | 中文 | Deutsch | 日本語 | Español

Unit Location: 1717
 Unit Description: RAC10
 Admin: or Call
 Support: Manuals_support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400
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Config

The Configuration page has five sub-tabs; Network, Monitoring, Diagnostics, Event Log, and Admin.

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 3-7 Network Configuration Page

The screenshot shows the RAC10 internal web interface. At the top, it displays 'GEIST RAC10 internal' with IP Address: 10.0.250.51 and Local Time: Tue, 2017-07-25 14:08:28. The version is RAC10™ v3.16.4 and it shows 'All is well: 3 Alarms monitored'. The left sidebar contains navigation tabs: Sensors, Alarms, Logging, Display, Config (selected), Network (selected), Monitoring, Diagnostics, Event Log, Admin, Control, and Help. Below the sidebar are links for PDA/Phone, XML, and MIB. The main content area is titled 'Configuration' and has two sections: 'Network' and 'Web Server'. The 'Network' section shows 'Current Network Configuration set statically' with a link speed of '10Mbps/half-duplex'. It has three radio button options: 'Use DHCP for Network Configuration and DNS Server Addresses', 'Use DHCP for Network Configuration and Static DNS server addresses', and 'Use Static Network Configuration and DNS server addresses' (which is selected). Below these are input fields for IP Address (10.0.250.51), Subnet Mask (255.255.255.0), Gateway (10.0.250.1), Primary DNS Server (8.8.8.8), and Secondary DNS Server (0.0.0.0). A 'Save Changes' button is at the bottom right of this section. The 'Web Server' section has a dropdown for Protocols set to 'HTTP and HTTPS', an input field for HTTP Port (80), an input field for HTTPS Port (443), and a dropdown for Telnet Service set to 'Enabled'. A 'Save Changes' button is at the bottom right of this section. At the bottom of the page, there are language links: English | Français | 中文 | Deutsch | 日本語 | Español. The footer contains contact information: Unit Location: 1717, Unit Description: RAC10, Admin: or Call, Support: Manuals, support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400, and Copyright © 2003-2015 Geist All Rights Reserved.

- **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.
- **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.

Configuration Network Tab

The user can enter and update the network settings on the Network tab of the Configuration page.

Figure 3-8 Configuration Network Tab

The screenshot shows the GEIST RAC10 configuration interface. At the top, the device name is RAC10 with IP address 192.168.123.123 and local time Mon, 03/09/15 11:08:03. The version is RAC10™ v3.15.1 and the status is 'All is well: 2 Alarms monitored'. A sidebar on the left contains navigation buttons: Sensors, Alarms, Logging, Display, Config (selected), Network (selected), Monitoring, Diagnostics, Event Log, Admin, Control, and Help. Below the sidebar are links for PDA/Phone, XML, and MIB.

The main content area is titled 'Configuration' and is divided into two sections:

- Network:** Shows 'Current Network Configuration set statically' and 'Link Speed: 10Mbps/half-duplex'. It offers three radio button options:
 - Use DHCP for Network Configuration and DNS Server Addresses
 - Use DHCP for Network Configuration and Static DNS server addresses:
 - Use Static Network Configuration and DNS server addresses:
 Below these are input fields for:
 - IP Address: 192.168.123.123
 - Subnet Mask: 255.255.255.0
 - Gateway: 192.168.123.1
 - Primary DNS Server: 8.8.8.8
 - Secondary DNS Server: 8.8.4.4
 A 'Save Changes' button is located at the bottom right of this section.
- Web Server:** Shows configuration for web services:
 - Protocols: HTTP and HTTPS (dropdown)
 - HTTP Port: 80
 - HTTPS Port: 443
 - Telnet Service: Enabled (dropdown)
 A 'Save Changes' button is located at the bottom right of this section.

At the bottom of the configuration area, there are language selection options: English | Français | 中文 | Deutsch | 日本語 | Español.

The footer contains the following text:

Unit Location:

Unit Description:

Admin: or Call

Support: Manuals, support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400

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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 section for details.

Figure 3-9 Configuration Monitor Tab

RAC10

IP Address: 192.168.123.123

Local Time: Mon, 03/09/15 11:11:22

RAC10™ v3.15.1

All is well: 2 Alarms monitored

- Sensors
- Alarms
- Logging
- Display
- Config
- Network
- Monitoring
- Diagnostics
- Event Log
- Admin
- Control
- Help

PDA/Phone | XHL | MIB

Configuration

E-mail

Protocols: No Authentication (email relay)

SMTP Server:

SMTP Port: 25

"From" E-mail Address:

Send alarms to this recipient:	Always	Business Hours ²	After Hours ²	SMS ²
To E-mail Address 1: <input style="width: 80%;" type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 2: <input style="width: 80%;" type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 3: <input style="width: 80%;" type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 4: <input style="width: 80%;" type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 5: <input style="width: 80%;" type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Save Changes
Send Test E-Mail

Business Hours

Start Time: 09:00

End Time: 17:00

Sun Mon Tue Wed Thu Fri Sat

Week Days:

Save Changes

System Status E-Mail Reports

Add New Report

SNMP

SNMP Service: Enabled

Temperature Precision: 1x degree C/F

Read Community: public

Listen port for GET: 161

Trap Community: private

Write Community: private

Trap Type: V1 Trap

Trap IP Address:port 1:

Trap IP Address:port 2:

Save Changes
Send Test SNMP Trap

Initial SNMPV3 data

Unauthenticated User: initial

Authenticated Manager: manager

Manager Authentication Password: 12345678

Manager Privacy Password: 12345678

Trap User: Trap

Trap Authentication Password: 12345678

Trap Privacy Password: 12345678

Save Changes

Configuration Diagnostics Tab

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

Figure 3-10 Configuration Diagnostics Tab

GEIST RAC10 internal
 IP Address: 192.168.150.226
 Local Time: Mon, 2015-03-09 12:52:58

RAC10™ v3.15.1
 All is well: 6 Alarms monitored

Configuration

Syslog
 Facility: LOCAL0
 Daemon Address:port 1: _____
 Save Changes

Syslog Configuration

Subsystems	Severity							
	emergency	alert	critical	error	warning	notice	inform	debug
os	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
lwip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
socket	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
macphy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
flashfl	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
webserv	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
spi0dev	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
device	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
host	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
setvars	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dynweb	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
snmp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
alarms	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
email	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
rtclock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sntp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
datalog	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
graphin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
firmwar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sntp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
datalog	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
graphin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
firmwar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
msgcatlg	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Save Changes

English | Français | 中文 | Deutsch | 日本語 | Español

Unit Location: 1717
 Unit Description: RAC10
 Admin: or Call
 Support: Manuals, support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400
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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 3-11 Configuration Event Log Tab

NVRAM Event Log

Click here to view **NVM** event log

[Clear NVM event log](#)

Memory Syslog

```

6/12/2017 11:06:59 setvars:var_init: Reading data from flash succeeded. Merged data will be written
6/12/2017 11:06:59 setvars:var_init: size of block in flash: 20524, current block 20524.
6/12/2017 11:06:59 setvars:var_init: Current firmware rev [1075], data in flash from rev [1075].
6/12/2017 11:06:59 setvars:var_init: token_read=[VARS BLOCK HERE], from address 0x80440000.
6/12/2017 11:06:59 setvars:var_netstack_push: secondary dns address set to static value: 8.8.4.4
6/12/2017 11:06:59 setvars:var_netstack_push: primary dns address set to static value: 8.8.8.8
6/12/2017 11:06:59 setvars:var_netstack_push: gateway set to 192.168.123.1.
6/12/2017 11:06:59 setvars:var_netstack_push: netmask set to 255.255.255.0.
6/12/2017 11:06:59 setvars:var_netstack_push: IP address set to 192.168.123.123.
6/12/2017 11:06:59 socket :set static IP to 192.168.123.123
6/12/2017 11:06:59 setvars:var_netstack_push: DHCP status set to 0.
6/12/2017 11:06:59 setvars:var_netstack_push: MAC address was set to 00:19:85:E0:7A:C1.
6/12/2017 11:06:59 setvars:var_netstack_push: secondary dns address set to static value: 8.8.4.4
6/12/2017 11:06:59 setvars:var_netstack_push: primary dns address set to static value: 8.8.8.8
6/12/2017 11:06:59 setvars:var_netstack_push: gateway set to 0.0.0.0.
6/12/2017 11:06:59 setvars:var_netstack_push: netmask set to 0.0.0.0.
6/12/2017 11:06:59 setvars:var_netstack_push: IP address set to 0.0.0.0.
6/12/2017 11:06:58 socket :set static IP to 0.0.0.0
6/12/2017 11:06:58 setvars:var_netstack_push: DHCP status set to 0.
6/12/2017 11:06:58 setvars:var_netstack_push: MAC address was set to 00:19:85:E0:7A:C1.

```


Memory Syslog

Subsystems	Severity							
	emergency	alert	critical	error	warning	notice	inform	debug
<i>os</i>	<input type="checkbox"/>							
<i>lwip</i>	<input type="checkbox"/>							
<i>socket</i>	<input type="checkbox"/>							
<i>macphy</i>	<input type="checkbox"/>							
<i>flashfl</i>	<input type="checkbox"/>							
<i>webserv</i>	<input type="checkbox"/>							
<i>spi0dev</i>	<input type="checkbox"/>							
<i>device</i>	<input type="checkbox"/>							
<i>host</i>	<input type="checkbox"/>							
<i>setvars</i>	<input type="checkbox"/>							
<i>dynweb</i>	<input type="checkbox"/>							

Configuration Admin Tab

The user can set the system clock on this tab. Additionally the user can set administrator and account passwords.

Figure 3-12 Configuration Admin Tab

The screenshot displays the GEIST Configuration Admin Tab interface. At the top, the header includes the GEIST logo, system information (RAC10 internal, IP Address: 192.168.150.226, Local Time: Mon, 2015-03-09 12:56:03), and version (RAC10™ v3.15.1). A status bar indicates "All is well: 6 Alarms monitored".

The main content area is titled "Configuration" and is divided into several sections:

- All Parameters:** Contains buttons for "Reset ALL to Default Values" and "Refresh DNS Cache".
- Reboot:** Contains a "Reboot" button.
- RS2 Disclaimer:** A warning box with the following text:
WARNING:
Please note that you are enabling this device to turn on or off electrical outlet(s) on RS2 unit(s).
Also note that the acceptance of these terms is saved in the XML configuration file on this device. If this file is used to configure another unit, then the acceptance of these conditions will carry over to that device as well.
There are no warranties, express or implied by this action, by the operation of law or otherwise, of enabling this feature. GEIST DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION, AND FITNESS FOR A PARTICULAR PURPOSE.
GEIST EXPRESS WARRANTY WILL NOT BE ENLARGED, DIMINISHED, OR AFFECTED BY AND NO
Below the text is a "Disabled" status indicator, an "I Accept" checkbox, and "Enable" and "Disable" buttons.
- System Clock, set to GMT:** Contains fields for:
 - Set Clock method: **NTP Server** (dropdown)
 - GMT to local, (+/-)hh:mm: **-06:00**
 - NTP primary server: **192.43.244.18** (text input)

The left sidebar contains navigation tabs: Sensors, Alarms, Logging, Display, **Config** (selected), Network, Monitoring, Diagnostics, Event Log, Admin, Control, and Help. At the bottom of the sidebar, it shows "PDA/Phone | XML | MIB".

NTP secondary server	<input type="text" value="129.6.15.28"/>
	129.6.15.28
Sync to NTP server period (seconds)	<input type="text" value="1800"/>
Save Changes	

Daylight Saving Time	
DST is DISABLED	
Enable DST:	<input type="text" value="Disabled"/>
Save Changes	

Name and Password Configuration	
<p>NOTE 1: If Account currently has a password, leaving Old Password blank results in no changes to that account. NOTE 2: Administrator password may be used in the Old Password field of any account. NOTE 3: If setting New Password to blank, Account Name must also be blank. NOTE 4: If New Password is not blank, Account Name must not be blank.</p>	
Administrator Account Name ¹	<input type="text" value="admin"/>
Old Password	<input type="text"/>
New Password	<input type="text"/>
New Password Again	<input type="text"/> (again, to confirm)
<small>Warning: Record your password. Loss of password may require 48 hours to recover.</small>	
Control Account Name ¹	<input type="text" value="admin"/>
Old Password	<input type="text"/>
New Password	<input type="text"/>
New Password Again	<input type="text"/> (again, to confirm)
<small>Warning: Record your password. Loss of password may require 48 hours to recover.</small>	
View Only Account Name ¹	<input type="text"/>
Old Password	<input type="text"/>
New Password	<input type="text"/>
New Password Again	<input type="text"/> (again, to confirm)
<small>Warning: Record your password. Loss of password may require 48 hours to recover.</small>	
Save Changes	

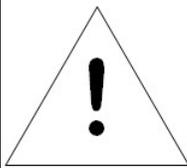
Time and Date

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 3-13 System Clock Page

The screenshot shows two configuration sections. The first section, titled "System Clock, set to GMT", contains the following fields: "Set Clock method" is a dropdown menu set to "NTP Server"; "GMT to local, (+/-)hh:mm" is a text input field containing "-05:00"; "NTP primary server" is a text input field containing "192.43.244.18" with a second line showing "192.43.244.18"; "NTP secondary server" is a text input field containing "129.6.15.28" with a second line showing "129.6.15.28"; and "Sync to NTP server period (seconds)" is a text input field containing "1800". A "Save Changes" button is located at the bottom right of this section. The second section, titled "Daylight Saving Time", shows "DST is DISABLED" in bold. Below this, "Enable DST:" is a dropdown menu set to "Disabled". A "Save Changes" button is located at the bottom right of this section.

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



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.

Email

The unit is capable of sending email 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 email configuration is set on the Monitoring tab of the Configuration page.

Figure 3-14 Email Page

E-mail

Protocols: POP3 before SMTP

POP3 Server:

POP3 Port: 110

SMTP Server: 192.168.115.9
192.168.115.9

SMTP Port: 25

"From" E-mail Address:

Username:

Password:

Send alarms to this recipient:

	Always	Business Hours ¹	After Hours ²	SMS ³
To E-mail Address 1: <input type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 2: <input type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 3: <input type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 4: <input type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
To E-mail Address 5: <input type="text"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Save Changes

Send Test E-Mail

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.



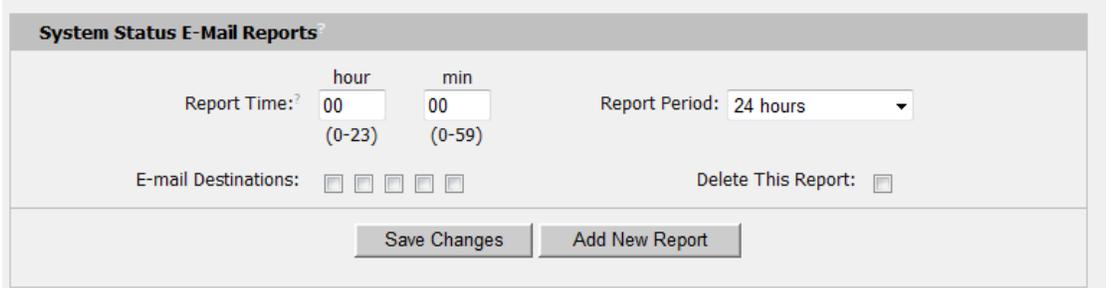
NOTE

The unit cannot receive emails, 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” email 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. Email addresses are selected when the report is created by checking the corresponding email destination box. Allowing the cursor to hover over an email destination box will display the email address that the box is associated with.

Figure 3-15 Email Reports Page



The screenshot shows a web interface titled "System Status E-Mail Reports". It features a "Report Time:" field with two input boxes for "hour" and "min", both set to "00". Below the hour box is the text "(0-23)" and below the min box is "(0-59)". To the right is a "Report Period:" dropdown menu currently set to "24 hours". Below these fields is an "E-mail Destinations:" section with five unchecked checkboxes. To the right of this section is a "Delete This Report:" checkbox, also unchecked. At the bottom of the form are two buttons: "Save Changes" and "Add New Report".

Accounts and Passwords

The RAC10 offers 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 page.
- **View-Only:** Password protects the Sensors page, including PDA and XML data.

Figure 3-16 Account Configuration Page

Name and Password Configuration

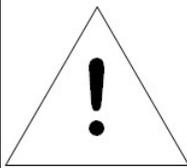
NOTE 1: If Account currently has a password, leaving Old Password blank results in no changes to that account.
 NOTE 2: Administrator password may be used in the Old Password field of any account.
 NOTE 3: If setting New Password to blank, Account Name must also be blank.
 NOTE 4: If New Password is not blank, Account Name must not be blank.

Administrator Account Name:
 Old Password:
 New Password:
 New Password Again: (again, to confirm)
 Warning: Record your password. Loss of password may require 48 hours to recover.

Control Account Name:
 Old Password:
 New Password:
 New Password Again: (again, to confirm)
 Warning: Record your password. Loss of password may require 48 hours to recover.

View Only Account Name:
 Old Password:
 New Password:
 New Password Again: (again, to confirm)
 Warning: Record your password. Loss of password may require 48 hours to recover.

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. The Control Access account must be active to enable the View-Only account. 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.

SNMP

The unit supports retrieval of all data via Simple Network Management Protocol (SNMP) v1 and v2c. 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 3-17 SNMP Configuration Page

The screenshot displays the SNMP configuration interface, divided into two main sections:

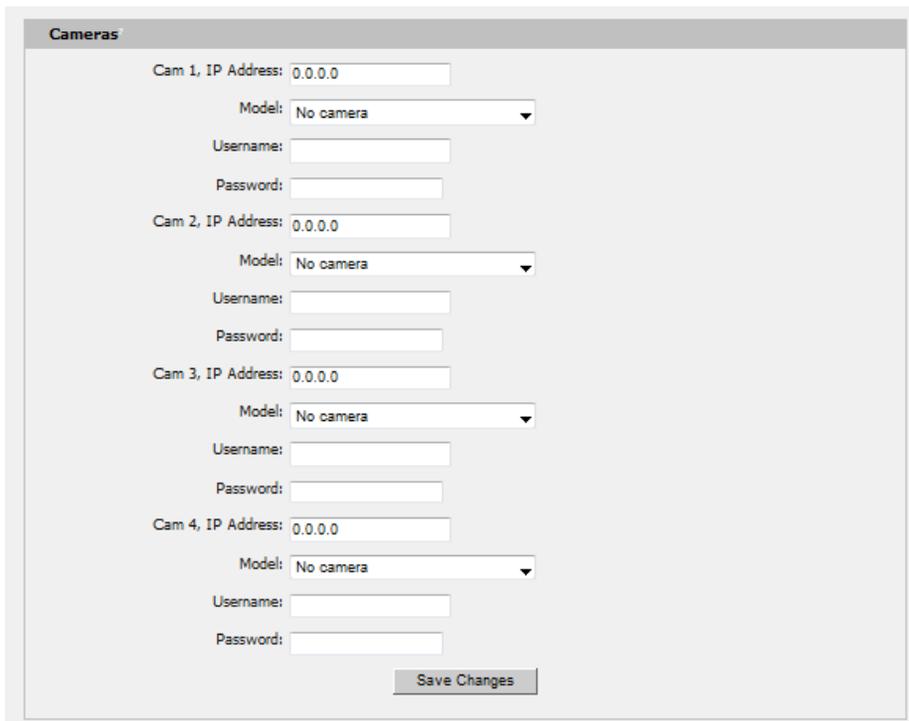
- SNMP Configuration:**
 - SNMP Service: Enabled (dropdown)
 - Temperature Precision: 1x degree C/F (dropdown)
 - Read Community: public (text input)
 - Listen port for GET: 161 (text input)
 - Trap Community: private (text input)
 - Write Community: private (text input)
 - Trap Type: V1 Trap (dropdown)
 - Trap IP Address:port 1: (text input)
 - Trap IP Address:port 2: (text input)
 - Buttons: Save Changes, Send Test SNMP Trap
- Initial SNMPV3 data:**
 - Unauthenticated User: initial (text input)
 - Authenticated Manager: manager (text input)
 - Manager Authentication Password: 12345678 (text input)
 - Manager Privacy Password: 12345678 (text input)
 - Trap User: Trap (text input)
 - Trap Authentication Password: 12345678 (text input)
 - Trap Privacy Password: 12345678 (text input)
 - Buttons: Save Changes
 - Footer note: Reset User/Access NVRAM will occur during the finish page.

The default community string is “public” and the MIB is downloadable via a link at the top of the unit’s web page.

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 3-18 Camera Configuration Page



The screenshot shows a web interface titled "Cameras" with four identical configuration sections for Cam 1, Cam 2, Cam 3, and Cam 4. Each section includes:

- IP Address: 0.0.0.0
- Model: No camera (dropdown menu)
- Username: [text input]
- Password: [text input]

A "Save Changes" button is located at the bottom right of the configuration area.



NOTE

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

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

The 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.

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 3-19 Admin Configuration Page

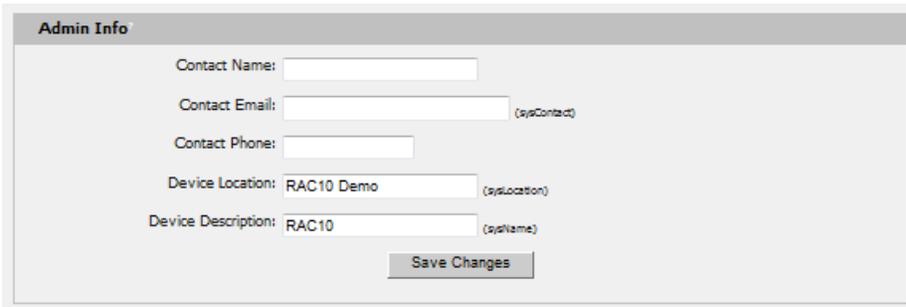


Figure 3-20 Admin Information Display on Configuration Page

Unit Location: 1717
Unit Description: RAC10
Admin: or Call
Support: [Manuals, support@geistglobal.com](mailto:support@geistglobal.com) or Call 800.432.3219 / +1.402.474.3400
Copyright © 2003-2015 Geist All Rights Reserved.

Control

General Operation

The RAC10 System may be set to automatically maintain a desired temperature, or to manually circulate a set volume of air on a continual basis. Once the desired mode of operation and set point has been set, the unit will operate without any interaction with the user.

Control Page

The Control page gives the user several options for entering the RAC10 control set point. A drop down menu allows the user to choose between a temperature set point or a manual fan capacity set point. In addition, the Control page allows the user to assign friendly names to any external temperature sensors attached to the RAC10.

Figure 3-21 Control Page

GEIST RAC10 RAC10™ v3.15.1
 IP Address: 192.168.123.123
 Local Time: Mon, 03/09/15 11:07:23
 All is well: 2 Alarms monitored

Control

Fan Control

Temp Set Point: 95 °F
 The range is 50 - 104 °F

Fan Capacity: 30
 The range is 30-100

RAC10	Temperature (F)	Enable	00001985E3882775
Temp Sensor	74.30 °F	<input checked="" type="checkbox"/>	4100000612C29828
Temp Sensor	70.92 °F	<input checked="" type="checkbox"/>	5200000613199E28
Temp Sensor	71.15 °F	<input checked="" type="checkbox"/>	

Save Changes

English | Français | 中文 | Deutsch | 日本語 | Español

Unit Location:
 Unit Description:
 Admin: or Call
 Support: Manuals, support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400
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Initial Set Point Configuration

The available control modes are:

- **Temperature Set Point:** Tells the RAC10 to use the temperature set point entered to control fan speed.
- **Fan Capacity:** Tells the RAC10 to use the manual set point entered in the box on the Control page for a continuous fan capacity.

Figure 3-22 Set Point Configuration

GEIST RAC10 RAC10™ v3.15.1
 IP Address: 192.168.123.123 Local Time: Mon, 03/09/15 11:07:23
 All is well: 2 Alarms monitored

Control

Fan Control

Temp Set Point: 95 °F
 The range is 50 - 104 °F

Fan Capacity: 30
 The range is 30-100

RAC10	Enable	00001985E3882775
Temperature (F)	<input checked="" type="checkbox"/>	
Temp Sensor		4100000612C29828
Temperature (F)	<input checked="" type="checkbox"/>	
Temp Sensor		5200000613199E28
Temperature (F)	<input checked="" type="checkbox"/>	

Save Changes

English | Français | 中文 | Deutsch | 日本語 | Español

Unit Location:
 Unit Description:
 Admin: or Call
 Support: Manuals_support@geistglobal.com or Call 800.432.3219 / +1.402.474.3400
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Accessories

Available Sensors

- **RT-12:** Temperature – 12 ft. cord
- **RT-20:** Temperature – 20 ft. cord

Connecting Remote Sensors

Plug-and-play remote temperature sensors may be attached to the RAC at any time via the RJ-12 connectors on the unit. Each sensor has a unique serial number and is automatically discovered and added to the web page. Up to four temperature sensors may be connected.



NOTE

The display order of the sensors on the web page is determined by the internal serial number of each sensor. Friendly names for each sensor can be customized on the Display page. The RAC will only recognize RT (Temperature) sensors. The sensor uses Cat. 3 wire and RJ12 connectors. Wiring must be straight-through: reverse polarity will temporarily disable all sensors until corrected. 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.

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 3-23 Camera Images



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

Figure 3-24 Camera Configuration Page

Cameras

Cam 1, IP Address:
Model: **No camera** ▼
Username:
Password:

Cam 2, IP Address:
Model: **No camera** ▼
Username:
Password:

Cam 3, IP Address:
Model: **No camera** ▼
Username:
Password:

Cam 4, IP Address:
Model: **No camera** ▼
Username:
Password:



NOTE

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

Chapter 4 - Final Checkout

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 Fan Controller first be updated to the latest firmware version. If this is not possible, please have the existing firmware version number for the unit available when contacting technical support.

Figure 4-1 Web Page Interface Header



Firmware Updates

Keep your unit updated with the latest firmware releases or sign up for notifications. <http://www.geistglobal.com/GeistUS/Docs/downloads.htm>.

Service and Maintenance

No service or maintenance is required. Do not attempt to open the RAC10 or you may void the warranty. No serviceable parts inside. It is recommended that power be removed from the unit before installing or removing any equipment.

More Technical Support

<http://www.geistglobal.com>
Email: support@geistglobal.com

- Americas
 - 1 888 630 4445
- Europe and Middle East
 - From within the UK 0845 026 3853
 - From abroad +44 845 026 3853
- Asia
 - English +1 888 630 4445 (US number)
 - Chinese +[86 755 8663 9505](tel:+8675586639505)

Or contact your distributor.

Product-Specific Safety Notices

The specific procedural safety precautions relating to this product are stated below.

General Safety

Safety is a serious matter and all precautions should be taken to guarantee a safe work and operational environment. General safety precautions must be observed during all aspects of operation, service, and repair of equipment described in this document. Failure to comply with the safety warnings, procedures and guidelines as presented in this document is in violation of the safety standards of design, manufacture, and intended use of this equipment.

You are responsible for following the safety guidelines and warnings presented in this document for this equipment. Individuals using or maintaining Geist product(s) are expected to follow all the noted warnings and safety precautions necessary for safe operation of the equipment in your environment. Geist assumes no liability for failure to comply with these requirements.

Live Circuits Safety



DANGER
HAZARDOUS VOLTAGE, CURRENT, AND ENERGY LEVELS ARE PRESENT IN THIS PRODUCT. POWER SWITCHED CIRCUITS CAN HAVE HAZARDOUS VOLTAGES PRESENT EVEN WHEN THE SWITCH IS IN THE OFF POSITION. DO NOT OPERATE THE PRODUCT WITH ANY COVER PLATE REMOVED. ALWAYS MAKE SURE THAT PRODUCT IS FULLY ENCLOSED PRIOR TO USE.

Operating personnel must:

- Not remove equipment covers. Only Geist Authorized Service Personnel or other qualified maintenance personnel may remove equipment covers for internal sub-assembly, or component replacement, or any internal adjustment.
- Not replace any equipment component with power applied to the line cord. Under certain conditions, dangerous voltages may exist even with the input power cable disconnected. Any exceptions for 'Hot-Swap' modules will be specifically noted in this product document.
- Always disconnect input power and discharge circuits before touching any sub-assembly of circuit component.

Equipment Grounding

To minimize shock hazard, the equipment chassis and enclosure must be connected to an electrical earth ground. The input power cable must be either plugged into an industry electrical code compatible receptacle or wired directly into an electrical code compatible interface. The equipment earth ground wire (typically green) must be firmly connected to the

facility electrical safety ground. The mating electrical interface to this equipment must comply with International Electromechanical Commission (IEC) standards.

Electrostatic Discharge

Geist strongly recommends that anti-static precautions be taken when installing, removing, or working on and around static sensitivity equipment. Industry approved anti-static devices such as wrist and heel straps, in conjunction with conductive foam pads, should be available and implemented only after verifying that they are in good working condition.

Electronic components such as memory modules, circuit boards, and LED displays, are sensitivity to Electro-Static Discharge (ESD). Handling of such components should be done only after proper anti-static workspace conditions have been established. Any static producing packing materials such as plastic, Styrofoam, and some cardboards, should be removed and discarded in a timely manner.

Explosive Environment

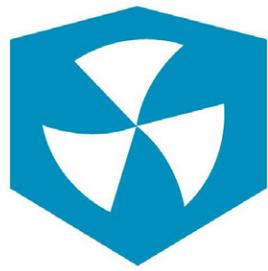
Do not operate this equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Servicing and Adjustments

Do not attempt to service this equipment, there are no field serviceable parts or sub-assemblies. Any adjustments should be made by authorized service personnel only.

Repairs and Modifications

Because of the danger of electrocution and/or severe health hazard, do not install substitute parts or perform any unauthorized modifications of this equipment. It is best to contact Geist for Warranty and Repair Service to ensure that safety features are maintained.



GEIST
COOL

**Thank You For
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