SENSAPHONE®
REMOTE MONITORING SOLUTIONS

Environmental Threat Detection and Notification

Temperature Water Leaks Humidity Power Security Air Flow

Computer Room & Data Center Application Guide

MADE IN THE USA

Why Choose Sensaphone

Sensaphone products are designed to help you watch over a remote facility. Our range of Sensaphone solutions can instantly inform you when conditions are less than perfect, plus you can check on the status at anytime. Sensaphone is the leader in Remote Monitoring with over 25 years in business and over 350,000 installed systems worldwide.

Our vast experience has helped us design products that are reliable, easy to use, flexible, and affordable. Listed below are just some of the reasons that Sensaphone is the best choice for your remote monitoring application.

Battery Backup:
All Sensaphone products either include battery backup, or offer it as an inexpensive option. Unlike other systems, when the power fails, your Sensaphone product will continue to operate and deliver alarms and status.

Maximum Flexibility:
Solutions are available from Sensaphone to notify you using custom voice phone calls, e-mails, text messages, faxes, SNMP traps, and more.

Remote Access:
Whether it's one of our phone line products, satellite products, or web-based products, there is always the ability for you to make programming changes remotely. With Sensaphone, you always have access to your critical information.

No Dependencies:
Sensaphone products are standalone solutions. The Sensaphone communicates directly to you and does not rely on the operation of a computer, server, or the response of a central service.

Field Proven in Sensitive Applications:
Sensaphone products have been successfully deployed to monitor the most sensitive applications including: emergency vaccines, medicines, tissue samples, blood banks, Homeland Security emergency response materials, military weapons systems, and countless others.

Easy To Use:
One of the most obvious differences between Sensaphone products and any similar system, is the ease of use. We make it a priority to make the programming and setup of our products to be as simple and clear as possible. Our programming interfaces are designed to be intuitive and not use any complicated codes or commands that you will see in other systems. Some of our products, like the IMS Series, will even automatically detect what type of sensor you have connected and configure it for you. And if you need any assistance with your Sensaphone product, our owner's manuals are very extensive with many examples and pictures. And if you still need more help, we offer

> Even when there are no critical events, you can always check the status of your computer room to give you peace of mind.

unlimited, toll free, telephone technical support. Just call us and we will walk you through it.

Made In The USA:
Sensaphone is based in Pennsylvania where we design and build our products. All aspects of the engineering design, manufacturing, servicing, testing, and support are performed here in the United States.

Contact Us:
Mail: 901 Tryens Road, Aston, PA 19014
Web: www.sensaphone.com
Phone: 877-373-2700 or 610-558-2700
Fax: 610-558-0222

Table of Contents

Computer Room Monitoring Considerations

Whether you have a small equipment closet or a large data center, the environment that surrounds your servers is critical. Unexpected changes in the environment can cause problems with efficiency, performance, and even complete failure. Here are some typical considerations for monitoring the critical conditions in your room.

Temperature:

Temperature monitoring can be performed using a few different methods depending on the size of the room and the concentration of heat sources. When measuring temperature, there are really two different situations that you want to detect: 1) Is the air conditioning operating correctly? 2) Are one or more servers generating an excessive amount of heat? And of course, sometimes both can be true.

When a low cost solution is required, a single temperature sensor mounted on the wall can be your guide to know if there are any problems. But, it won't be able to distinguish between a problem with lack of cold air, or a problem with an overheating server. In order to make that distinction, you should place temperature sensors at your cold air supply, and also inside your rack near your servers, as well as on the wall for an overall average reading. By monitoring and alarming on all three of these temperature readings, you will not only know when you have a problem, but also the most likely cause of the problem.

Water on Floor:

What's going on underneath your raised floor shouldn't be a mystery. Water sensors are needed for immediate detection of leaks from air conditioning systems or other potential water sources. Sensaphone offers two types of water sensors, one that detects water at one spot, and another that uses a sensor rope to cover a larger area.

Air Flow:

In larger computer rooms and data centers, it sometimes requires more sensor information to determine potential problems with cooling efficiency. In addition to measuring temperature at various points, the rate of airflow can also be a key in determining the overall health of the environment. Using airflow sensors with the Sensaphone IMS series of products can be very enlightening and even find potential inefficiencies before an overheating problem occurs.

Room Humidity:

Humidity is often overlooked, but can be almost as important as the temperature in any size room. Excessively low humidity can be the cause of constant static electricity discharges that wear and potentially damage your equipment. High humidity is just as bad, and can be the cause of condensation on internal electronics leading to corrosion and premature failure. Don't forget to add a humidity sensor to watch for these potential situations.
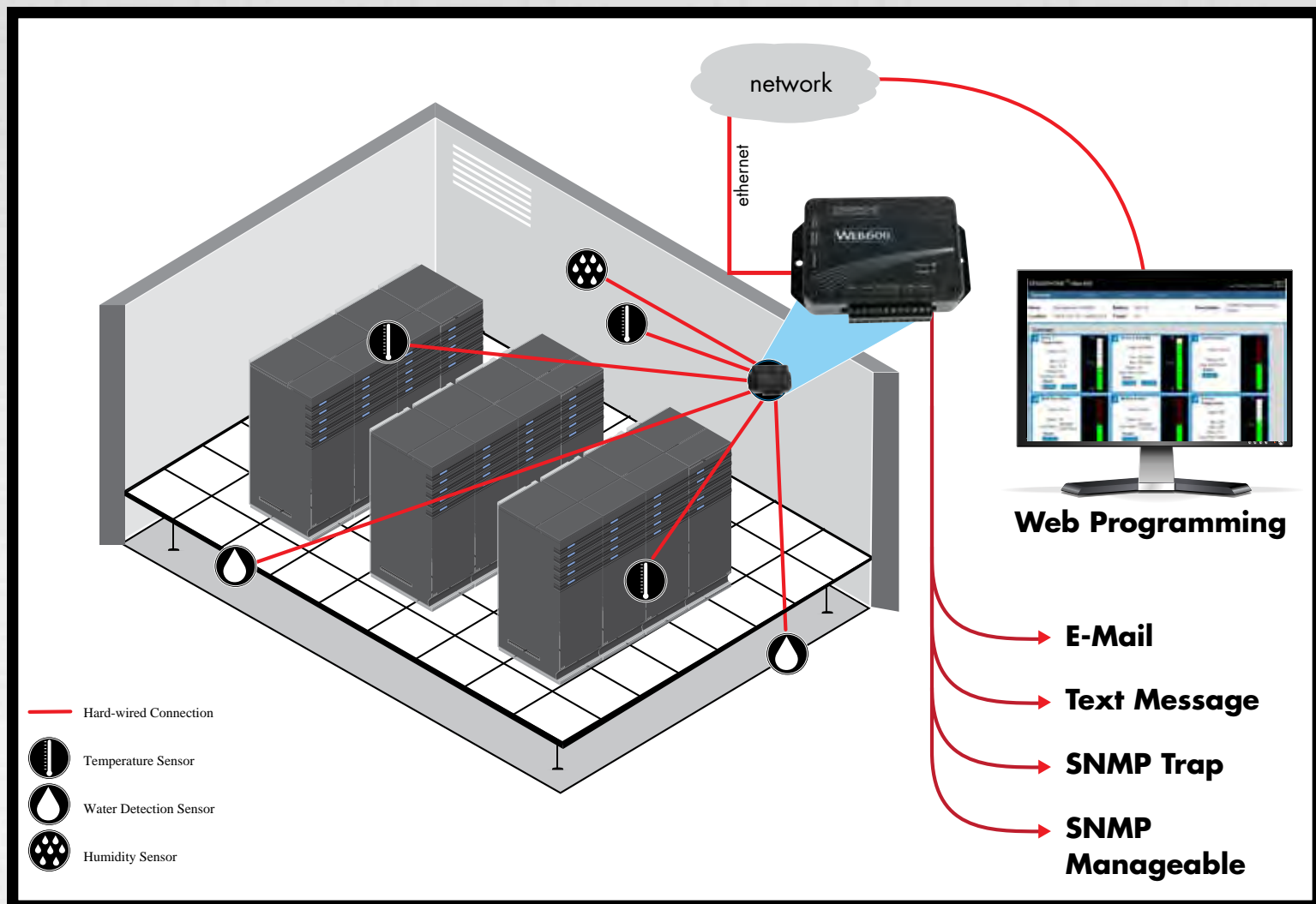
Contact Status From Other Devices:

Monitoring the status of your UPS system is a good idea for multiple reasons. First of all, depending on the size and configuration of your computer room, you may not be able to monitor the raw power status. In that case, the only way for the Sensaphone to determine if you are running on standby power is to interface the status of your UPS with the Sensaphone.

The second reason for monitoring your UPS, is that the UPS itself is also a potential point of failure in your computer room. In addition to your backup power systems, you may also have other equipment, like air handlers, generators, and such that should also be interfaced with a Sensaphone to monitor.

Physical Security:

Sensaphone products can also be used to perform some of your physical security as part of its overall monitoring and alarming. Sensors can be added to the doors entering rooms, or even the doors to the individual server cabinets. Motion detectors are available as well. The IMS Series of products can even interface with third party IP cameras.

network

ethernet

WEB600

Web Programming

E-Mail

Text Message

SNMP Trap

SNMP Manageable

— Hard-wired Connection

◑ Temperature Sensor

⬤ Water Detection Sensor

⬤ Humidity Sensor

What does the WEB600 do for your computer room?

For small computer rooms or equipment closets, the Sensaphone Web600 can provide simple, cost effective monitoring and data logging. Six universal sensor inputs are provided in this network-based product. Temperature is usually the most critical condition to measure, and in a small room this can usually be done with a single sensor. Measuring air temperature should be a good indication of whether the environment is acceptable or not. In addition to the air temperature, other recommended conditions to monitor would be humidity, water on the floor, and status of a UPS. The Web600 will automatically monitor for power failure when used with the optional external battery backup.

When any sensor detects a condition that is out of range, the Web600 can send e-mails, text messages, and SNMP traps. Up to 32 alarm notifications can be sent. In addition to the alarming, the Web600 can also perform data logging functions and store up to 32,000 time stamped records internally.

> When any sensor detects a condition that is out of range, the Web600 can send e-mails, text messages, and SNMP traps

The Web600 provides an internal web page for all programming and configuration. Access to the logged data is also through the internal web page, or by using XML. Modbus/IP protocol is also supported for interfacing with existing building control system. SNMP access from a network management system is also fully supported.

Functional Diagram

Battery Backup

Ethernet

Data log

6 Universal Inputs

E–Mails
Text Messages
SNMP Traps

Web Page

Specifications

Suggested Sensors

INPUT SENSING:

- Up to 6 Hard Wired Sensors.
- Sensor Types Accepted:

  2.8k resistive Thermistor

  10k resistive Thermistor

  Normally Open Contact

  Normally Closed Contact

  4-20mA Current Loop Transducer

- Analog readings are performed in 12-bit resolution.
- Built-in power failure monitoring when used with optional battery backup.
- Programmable sensor time scheduling.

SUPPORTED PROTOCOLS:

- Web page - HTTP, PDA, WAP, and XML.
- SNMP - MIB with Traps, GET, GETNEXT, and SET.
- MODBUS/TCP Slave

COMMUNICATIONS:

- Ethernet 10/100Base-T

PHYSICAL PROPERTIES:

- 5.5" x 3.25" x 1.25"
- 0.5 lbs

ALARM NOTIFICATION:

- Up to 8 User Profiles with 4 alarm contact methods for each.
- Each notification can be delivered by:
  - E-mail
  - Text message
  - SNMP trap
- Alarms can be assigned to specific user profiles to direct responsibility.
- Up to 8 alarm escalation levels.
- Programmable user scheduling.

DATA LOGGING:

- Up to 32,000 samples of time stamped data stored internally.
- Programmable sampling rate per input sensor.
- 1 second to 1 month sampling rate range.

POWER REQUIREMENTS:

- 110 or 220 VAC power.
- Optional rechargeable battery backup.

The Web600 uses very inexpensive hard-wired sensors. Each input can accept a contact closure, and analog Thermistor temperature sensor, or an analog 4-20mA transducer. Below is a list of the most common sensors for a small computer room.

BASIC TEMPERATURE SENSOR
Small and convenient to mount just about anywhere. Place inside of a cabinet or on a wall to measure a wide range of temperatures.

FGD-0102 . . . . .10K Temperature Sensor

DECORATOR TEMPERATURE SENSOR
Used to monitor the average temperature of a room and still look stylish on the wall.

FGD-0103 . . . . 10K Room Temp Sensor

ANALOG HUMIDITY TRANSMITTER
Reads actual analog humidity value to monitor high and low thresholds.

FGD-0052 . . . . Analog Humidity Sensor

SPOT WATER DETECTION SENSOR
The Spot Water Detection Sensor can be used with the WEB600 to detect the presence of water on a horizontal surface. It is independently powered by internal lithium batteries that should last for approximately 3-5 years. Multiple sensors can be wired in series to a single input.

FGD-0013 . . . . .Spot Water Detection Sensor

ZONE WATER DETECTION SENSOR
The Zone Water Detection Sensor can be used with the WEB600 to detect the presence of water on a floor or in a false ceiling. It comes with 10' of WaterRope capable of covering a larger area than the spot water sensor. Up to ten Water Ropes can be cascaded from a single sensor for even greater coverage. Operates on two AA batteries.

FGD-0056 . . . . Zone Water Detection Sensor

External Battery Backup Module

The WEB600 Battery Backup module (FGD-W610-B) provides uninterrupted backup power when main power fails. The module includes a rechargeable battery and charge control circuitry to keep the battery fully charged while connected to a powered WEB600. The module can provide up to 2 hours of backup time in the event of a power failure. The battery module connects to the WEB600 using a short cable included with the battery module.
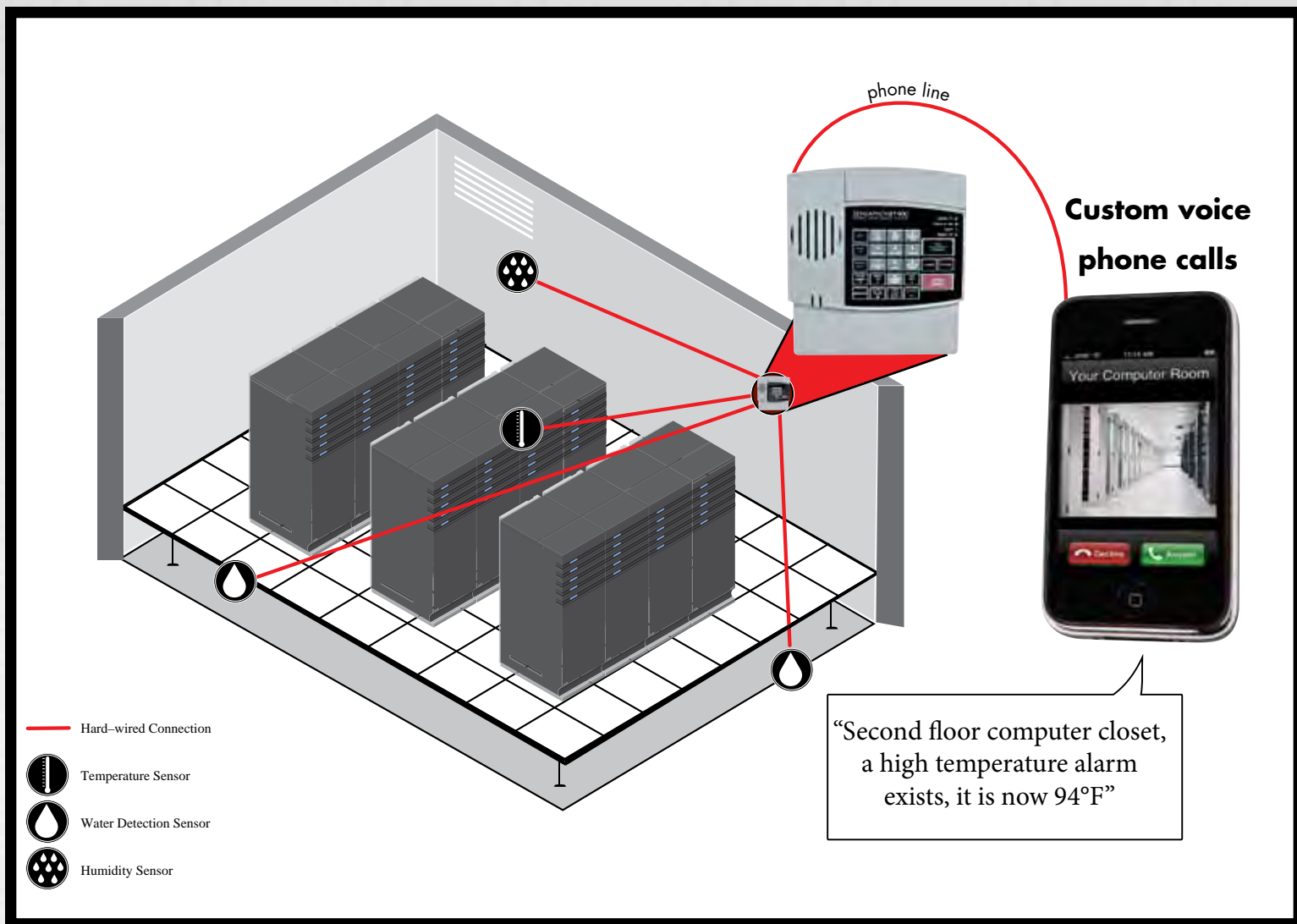
Description	Part Number
WEB600.	FGD-W600
WEB600 Battery Backup	FGD-W610-B

400 & 800 • Wakes You Up!

Custom voice phone calls

phone *line*

"Second floor computer closet, a high temperature alarm exists, it is now 94°F"

Legend:
- Hard–wired Connection
- Temperature Sensor
- Water Detection Sensor
- Humidity Sensor

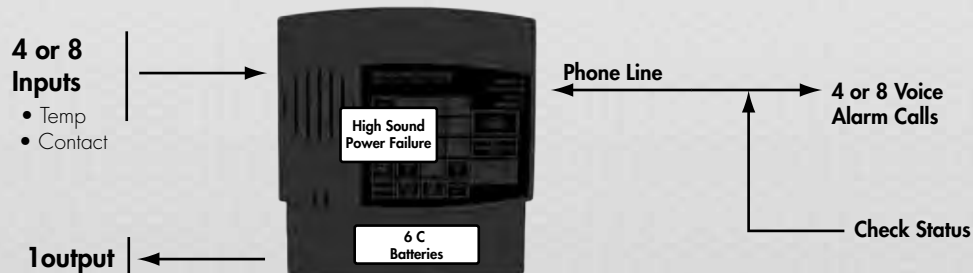# What does the 400 or 800 do for your computer room?

The Sensaphone Model 400 and Model 800 products provide the best notification method available when you need to know about a potential problem immediately. They will wake you up! A real voice phone call is made whenever a sensor indicates a potentially threatening condition.

The Sensaphone will speak the actual alarm condition and even recite the current value of an analog sensor. So if the temperature is too high, not only will it tell you that the temperature is too high, but it will even speak the current temperature reading so you know exactly what

is going on in your computer room. All alarms being monitored can have custom recorded voice messages programmed for easy alarm identification.

Four sensor inputs are provided on the Model 400, and eight inputs on the Model 800. Each sensor input can connect to an analog temperature sensor, or a dry contact status sensor. Both the 400 and 800 will automatically detect and report on a power failure. A relay output is also included so that a local indication can be added to alert onsite staff.

Functional Diagram

4 or 8 Inputs
- Temp
- Contact

High Sound Power Failure

6 C Batteries

1 output

Phone Line

4 or 8 Voice Alarm Calls

Check Status

INPUT SENSING:

- Up to 4 hard wired sensors (Model 400)
- Up to 8 hard wired sensors (Model 800)

ELECTRICAL SENSOR TYPES ACCEPTED:

- 2.8k resistive Thermistor
- Normally Open Contact
- Normally Closed Contact
- Automatic input type configuration.
- Built-in power failure monitoring.
- Programmable recognition times.

ALARM NOTIFICATION:

- Up to 4 phone calls (Model 400)
- Up to 8 phone calls (Model 800)
- Custom user-recorded site ID voice message
- Custom user-recorded alarm message for each input channel
- Programmable phone call timing parameters
- Built-in alarm test function to simulate and test the notification process.

MICROPHONE:

- Internal microphone for custom voice message recording.
- Monitor high sound alarms.
- Microphone can also be used for remote listen-in feature.

OUTPUT:

- Single alarm relay output for optional local alarm indication.
- Manual or automatic alarm response switching.

REMOTE ACCESS:

- Call in with any phone to check the status of all monitored conditions.
- Make programming changes remotely from any Touch-Tone phone.
- Remotely control the output relay.

LOCAL ACCESS:

- Keypad and speaker for local programming.
- Easy voice-prompted programming.
- Password-protected to restrict programming access.

POWER REQUIREMENTS:

- Comes with 110 VAC plug-in power supply, 220 optional.
- 24 Hour battery backup using 6 size C alkaline batteries (not included).

PHYSICAL PROPERTIES:

7½" W, 2" H, 8½" D

4 lbs

The Sensaphone 400 and 800 use very inexpensive hard-wired sensors. Each input can accept a contact closure, or an analog Thermistor temperature sensor. Below is a list of the most common sensors for a small computer room.

BASIC TEMPERATURE SENSOR

Small and convenient to mount just about anywhere. Place inside of a cabinet or on a wall to measure a wide range of temperatures.

FGD-0101 . . . . 2.8K Temperature Sensor

HUMIDITY ALARM SENSOR

Dial in your high or low humidity threshold and this sensor will trip the Sensaphone 400 or 800 when it crosses that level.

FGD-0027 . . . . Humidity Alarm Sensor

SPOT WATER DETECTION SENSOR

The Spot Water Detection Sensor can be used with the Sensaphone 400 or 800 to detect the presence of water on a horizontal surface. It is independently powered by internal lithium batteries that should last for approximately 3-5 years. Multiple sensors can be wired in series to a single input.

FGD-0013 . . . . Spot Water Detection Sensor

ZONE WATER DETECTION SENSOR

The Zone Water Detection Sensor can be used with the Sensaphone 400 or 800 to detect the presence of water on a floor or in a false ceiling. It comes with 10' of WaterRope capable of covering a larger area than the spot water sensor. Up to ten Water Ropes can be cascaded from a single sensor for even greater coverage. Operates on two AA batteries.

FGD-0056 . . . . Zone Water Detection Sensor

Call today to request a free catalog to view the full line of Sensaphone sensors and accessories.

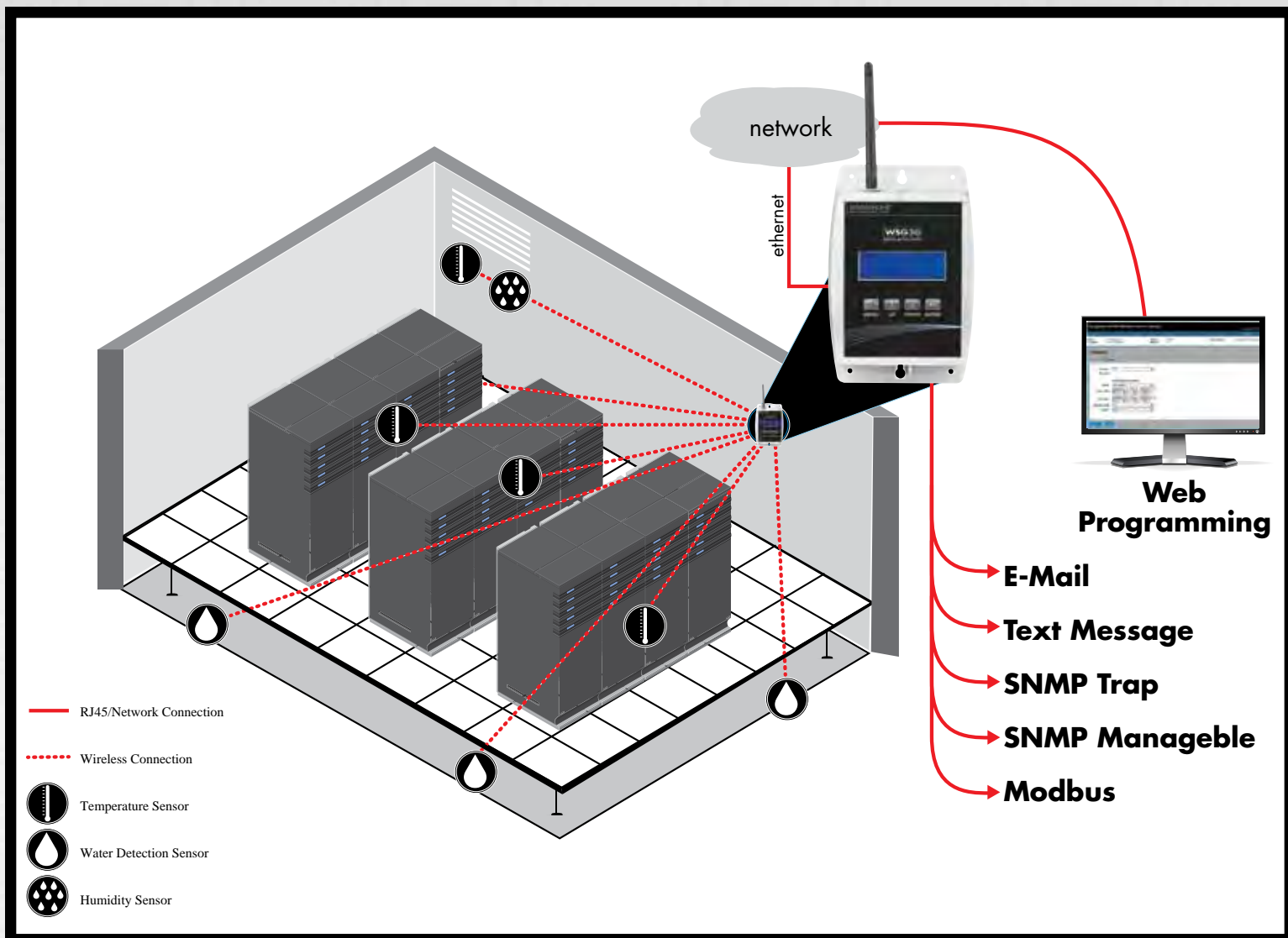| Description	Part Number
Sensaphone 400	FGD-0400
Sensaphone 800	FGD-0800

network

ethernet

Web Programming

E-Mail

Text Message

SNMP Trap

SNMP Manageble

Modbus

RJ45/Network Connection

Wireless Connection

Temperature Sensor

Water Detection Sensor

Humidity Sensor

What does the WSG30 do for your computer room?

The Sensaphone WSG30 is a Wireless Sensor Gateway system that can monitor from as many as 30 wireless sensors. Using all wireless sensors is not only a convenience, it also provides the flexibility you need for a changing environment. Computer rooms and data centers are becoming more and more dynamic with frequent equipment changes and upgrades. And since today's

servers are so powerful, these changes can completely alter the thermal profile of a room. Using wireless sensors will give you the flexibility you need to follow the heat and stay on top of your potential heat problems.

In addition to temperature monitoring, sensors are available for the WSG30 to measure humidity, water on the floor, power

failure, plus 3rd party equipment interfaces. The wireless sensors are battery powered and supervised. Signal strength, battery level, and proper operation are all monitored by the WSG30 in addition to looking out for readings that are out of the acceptable range.

Custom alarm parameters are programmed through a built-in web page interface, and alarm notifications can be delivered through e-mails, text messages, and SNMP traps. The WSG30 is also SNMP manageable and accessible through the Modbus/IP protocol. The wireless sensors can also be used as a Mesh network so that sensors can act as repeaters extending the total distance and area covered.

Functional Diagram

Up to 30 Wireless Sensors

Rechargeable Batteries

Ethernet

E–Mails
Text Messages
SNMP Traps
Modbus

Web Page

Specifications

INPUT SENSING:

- Up to 30 Wireless Sensors.
- Wireless distance up to 300 feet.
- Sensors can act as repeaters forming a Mesh network.
- Analog readings are performed in 12-bit resolution.
- Built-in power failure monitoring.
- Programmable sensor time scheduling.

ALARM NOTIFICATION:

- Up to 8 User Profiles with 4 alarm contact methods for each.
- Each notification can be delivered by:
  - E-mail
  - Text message
  - SNMP trap
- Alarms can be assigned to specific user profiles to direct responsibility.
- Up to 8 alarm escalation levels.
- Programmable user scheduling.

COMMUNICATIONS:

- Ethernet 10/100Base-T
- Wireless 2.4Ghz

SUPPORTED PROTOCOLS:

- Web page - HTTP, PDA, WAP, and XML.
- SNMP - MIB with Traps, GET, GETNEXT, and SET.
- MODBUS/TCP Slave

DATA LOGGING:

- Up to 64,000 samples of time stamped data stored internally.
- Programmable sampling rate per input sensor.
- 1 second to 100 hour sampling rate range.

POWER REQUIREMENTS:

- Main WSG30 requires 110 or 220 VAC power.
- Built-in rechargeable battery backup.
- Sensors use standard AA batteries with up to 3 year operation.

PHYSICAL PROPERTIES:

- 7.6" x 5.1" x 2.0" (19.3cm x 13cm x 5cm)

2.5 lbs (1.1kg)

Description	Part Number
WSG30	FGD-WSG30

WSG Sensors

The WSG30 uses its own set of wireless sensors. UP to 30 sensors can be used per WSG30 device, with any combination of sensor types.

WSG WIRELESS TEMPERATURE SENSOR

The WSG Wireless Temperature sensor includes a built-in radio transmitter and temperature element for monitoring temperature wherever the device is installed.

FGD-WSG30-TMP . . . WSG Wireless Temperature Sensor

WSG WIRELESS HUMIDITY SENSOR

The WSG Wireless Humidity Sensor includes a built-in radio transmitter and humidity sensor element for monitoring humidity wherever the device is installed.
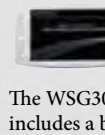
FGD-WSG30-HUM . . . . . WSG Wireless Humidity Sensor

WSG WIRELESS POWER FAILURE SENSOR

The WSG Wireless Power Failure sensor includes a built-in radio transmitter, two AA alkaline batteries and a wall plug in power supply. The sensor will detect a loss of power at the outlet where the power supply is attached.
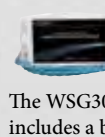
FGD-WSG30-PWR . . WSG Wireless Power Failure Sensor

WSG WIRELESS SPOT WATER DETECTION SENSOR

The WSG30 Wireless Spot Water Detection Sensor includes a built-in radio transmitter and water sensing probes for monitoring for the presence of water at a particular location.

FGD-WSG30-SPOT . . . WSG Wireless Spot Water Sensor

WSG WIRELESS ZONE WATER DETECTION SENSOR

The WSG30 Wireless Zone Water Detection Sensor includes a built-in radio transmitter and ten feet of water sensing cable for monitoring for the presence of water in a particular area.

FGD-WSG30-ZONE. . WSG Wireless Zone Water Sensor

WSG WIRELESS 4-20MA SENSOR

The WSG30 Wireless 4-20mA sensor includes a built-in radio transmitter, 4-20mA input and a 24V loop power supply.

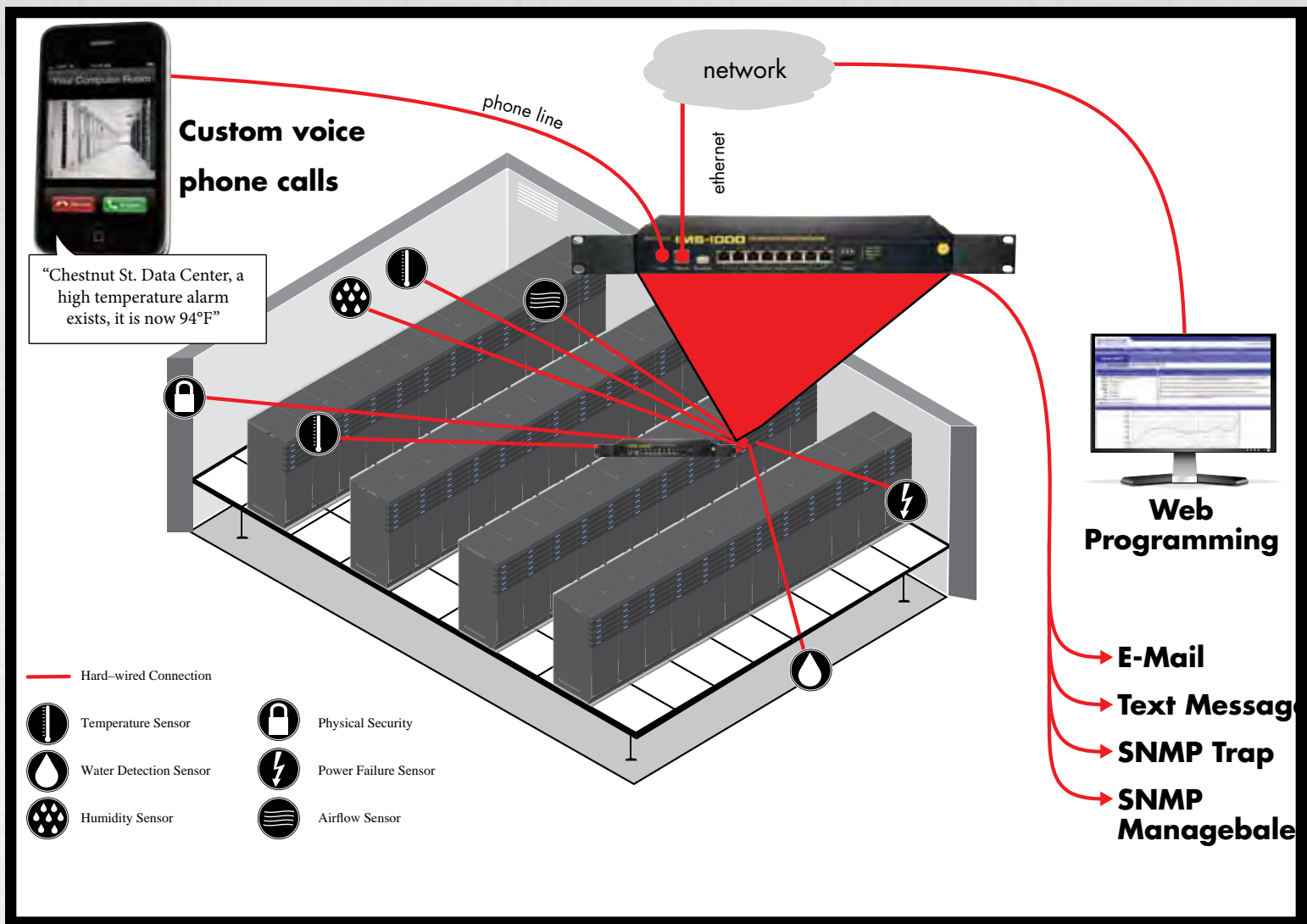FGD-WSG30-4-20 . . . . . WSG Wireless 4-20mA Sensor

WSG WIRELESS DRY CONTACT SENSOR

The WSG Wireless Dry Contact sensor includes a built-in radio transmitter and input terminals for connecting to any normally-open or normally closed output.

FGD-WSG30-DRY . . . WSG Wireless Dry Contact Sensor

network

phone line

ethernet

Custom voice phone calls

"Chestnut St. Data Center, a high temperature alarm exists, it is now 94°F"

Web Programming

E-Mail

Text Message

SNMP Trap

SNMP Managebale

— Hard–wired Connection

🌡 Temperature Sensor

💧 Water Detection Sensor

🔒 Physical Security

⚡ Power Failure Sensor

🕸 Humidity Sensor

〰 Airflow Sensor

What does the IMS-1000 do for your computer room?

For more critical applications, the IMS-1000 adds additional levels of reliability to its monitoring functions. A unique set of sensors is used with the Sensaphone IMS series of products that are smart and supervised. The IMS sensors connect with Cat-5 cable for convenience, and as soon as you connect one to the IMS-1000, it is automatically identified and programmed.

Up to eight smart IMS sensors can be connected to the IMS-1000.

For alarm notification, the IMS-1000 offers multiple options with redundancy. An Ethernet connection allows for e-mail and text message alarming plus SNMP traps, but the 1000 also includes a telephone line connection. In the event of a catastrophic network failure when no alarms can

be delivered through the network, the IMS-1000 gives you the redundancy of an out-of-band phone line for alarm delivery. It can make custom voice message alarm phone calls to describe the detected problems, even during a complete network failure. The voice phone calls are also necessary when you need to wake someone up in the middle of the night to tend to a critical problem before morning.

The IMS-1000 also comes with built-in battery backup to keep running during a power failure event. Time stamped data logging is also included along with a relay output for a local alarm indication.

Functional Diagram

Up to 8 IMS CAT-5 Sensors →

IMS-1000 Host

Phone Line

Ethernet

→ Voice Phone Calls

— Voice Call In Status

— E–Mail Alarms
— Web Status
— Web Programming
— SNMP Traps
— SNMP Management

PC Running Web Browser

INPUT SENSING:

- Up to 8 sensors.
- Uses smart, supervised IMS series sensors with Cat-5 connections.
- Automatic sensor identification and setup.
- Built-in power failure monitoring.

IP MONITORING:

- Up to 16 network devices or servers can be monitored.
- Specific TCP port services can be monitored for connectivity and response.
- Lack of response generates an alarm notification.

ALARM NOTIFICATION:

- Up to 16 User Profiles with 4 alarm contact methods for each.
- Each notification can be delivered by:
  - E-mail
  - Text message
  - SNMP trap
  - Custom voice telephone calls, fax, paging with optional voice modem. (IMS-1002) Voice calls include specific descriptions of alarms and sensor values.
- Alarms can be assigned to specific user profiles to direct responsibility.
- Programmable user scheduling.

SUPPORTED PROTOCOLS:

- Web page - HTTP, PDA, WAP, and XML.
- SNMP - MIB with Traps, GET, GETNEXT, and SET.

COMMUNICATIONS:

- Ethernet 10/100Base-T
- RJ-11 Telephone interface (IMS-1002)

DATA LOGGING:

- Up to 100,000 samples of time stamped data stored internally.
- Programmable sampling rate per input sensor from 1 sec to 1 month.
- Alarm events and notification details are also logged creating an audit trail.

IP CAMERA SUPPORT:

- Up to 16 IP cameras from third parties can be integrated.
- Alarms can trigger automatic image capture from IP cameras.

POWER REQUIREMENTS:

- 110 or 220 VAC power.
- Built-in rechargeable battery backup.

PHYSICAL PROPERTIES:

- 14"w x 1.75"h x 7"d
- 3.75lbs

| Description	Part Number
IMS-1000 Single Room Monitoring Solution	IMS-1001
IMS-1000 Single Room Monitoring Solution w/ Voice Modem	IMS-1002

Each IMS sensor connects to the host via a RJ45 Jack. Because the sensors use existing wiring system, no special wiring is required. Simply locate where you want to place a sensor, attach a standard patch panel and do the same in your server room to connect.

ROOM TEMPERATURE SENSOR

This temperature sensor is designed to monitor ambient air temperatures. User configurable to either °C or °F.

IMS-4810 . . . . Room Temperature Sensor
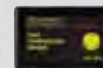
IMS MINI TEMPERATURE SENSOR

The mini temperature sensor is ideal for monitoring temperatures inside small cabinets or tight spaces.

IMS-4812 . . . . .Mini Temperature Sensor

IMS ROOM HUMIDITY SENSOR

The humidity sensor is used to monitor relative humidity in the computer room.

IMS-4820 . . . . IMS Room Humidity Sensor

IMS WATER DETECTION SENSOR

The Water Detection Sensor protects servers and equipment from damaging water leaks from malfunctioning HVAC systems, cafeteria accidents or general plumbing failures in the facilities.

IMS-4830 . . . . IMS Water Detection Sensor

IMS POWER FAILURE SENSOR

The Power Failure Sensor lets users monitor power anywhere within the infrastructure. It reports any loss of power and measures the current voltage in the circuit. Monitors voltage from 0-250VAC.
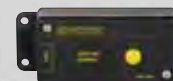
IMS-4840 . . . . IMS Power Failure Sensor

IMS MAGNETIC REED SWITCH

The Magnetic Reed Switch enables the IMS-1000 to detect if any unauthorized entry or intrusion has occurred.

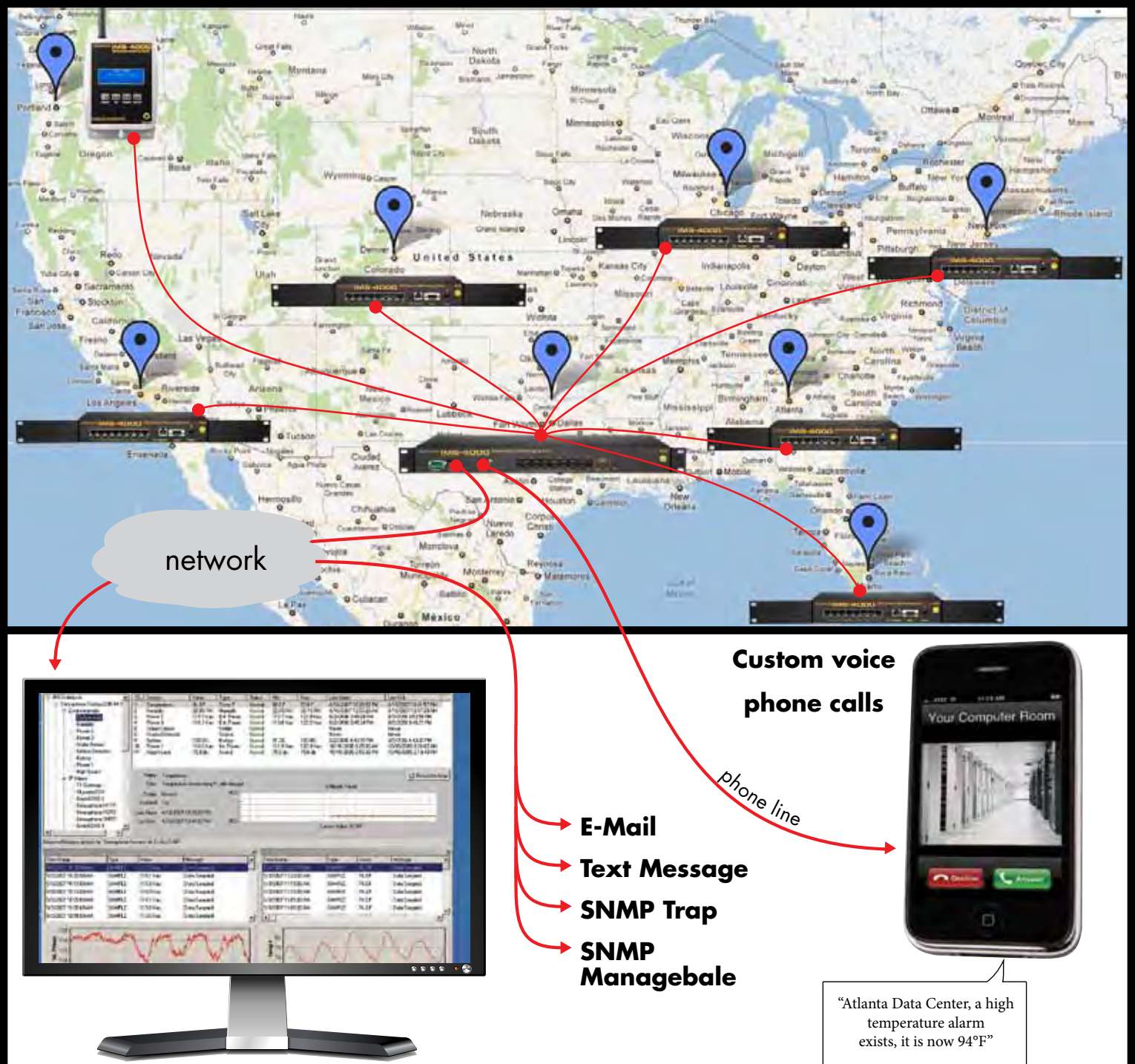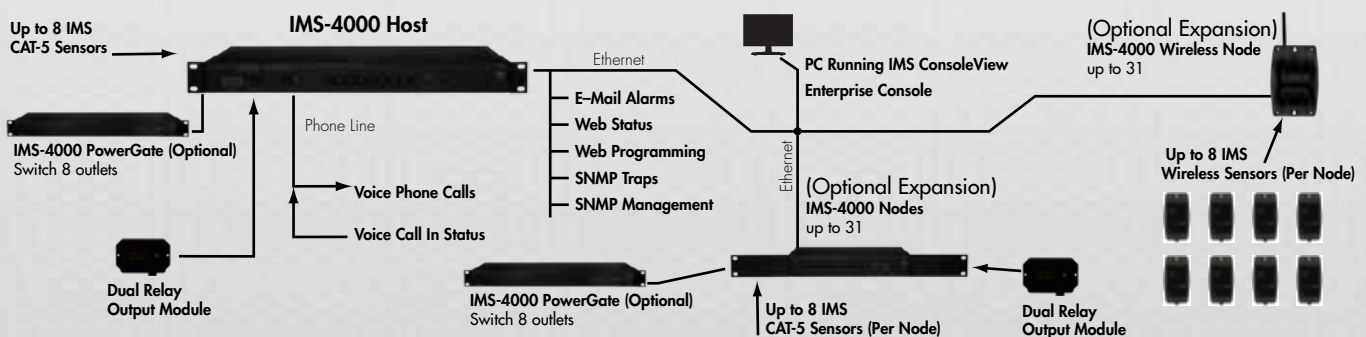IMS-4860 . . . . IMS Magnetic Reed Switch

IMS AIRFLOW SENSOR

The Airflow Sensor is designed to monitor for the presence of cool moving air. This sensor is especially useful for monitoring air conditioning systems. It provides relative airflow as a percentage from 0 to 100

IMS-4863 . . . . IMS Airflow Sensor

IMS-4000 • Enterprise System

network

Custom voice phone calls

E-Mail

Text Message

SNMP Trap

SNMP Managebale

phone line

Your Computer Room

"Atlanta Data Center, a high temperature alarm exists, it is now 94°F"

Functional Diagram

Up to 8 IMS
CAT-5 Sensors

IMS-4000 Host

**PC Running IMS ConsoleView
Enterprise Console**

(Optional Expansion)
IMS-4000 Wireless Node
up to 31

Ethernet

IMS-4000 PowerGate (Optional)
Switch 8 outlets

Phone Line

— E–Mail Alarms
— Web Status
— Web Programming
— SNMP Traps
— SNMP Management

Ethernet

Up to 8 IMS
Wireless Sensors (Per Node)

Voice Phone Calls

Voice Call In Status

(Optional Expansion)
IMS-4000 Nodes
up to 31

**Dual Relay
Output Module**

IMS-4000 PowerGate (Optional)
Switch 8 outlets

Up to 8 IMS
CAT-5 Sensors (Per Node)

**Dual Relay
Output Module**

IMS-4000 - The Expandable Enterprise Solution

For larger monitoring requirements with multiple locations, the IMS-4000 Enterprise Solution can expand and grow with your needs. The IMS-4000 Host performs all of the same monitoring functions as the IMS-1000, but with the ability to monitor multiple locations within a facility, or even multiple locations across the globe. The key to this distributed monitoring is the addition of IMS-4000 Nodes. Each Node can also monitor up to 8 external IMS sensors, but it reports back to a Host through the network. Up to 31 IMS Nodes can report back to a single IMS Host. The IMS-4000 Console View software package is included with each Host providing an enterprise view of up to 32 locations per Host. If you have more than 32 locations, no problem, multiple Host networks can be managed within the same Console View software package. A multi-site/multi-user software license is included with the purchase of the Host, so you don't need to worry about additional licensing costs. Multiple users will have an enterprise view from any location.

In addition to the enterprise level monitoring that the IMS-4000 system provides, it also includes an assortment of advance features not found in the IMS-1000. All environmental and IP alarms can be scheduled so that they are only

## The IMS-4000 Enterprise Solution can expand and grow with your needs

monitored for alarms during certain hours, or certain days of the week if required. The alarm notification is more powerful with the phone modem and custom voice messages a standard feature on the 4000. It can also provide alarm messages to fax machines and pagers. More notification flexibility comes with the addition of time scheduling for users, and even alarm grouping for different groups of users. The IMS-4000 will make sure that only the appropriate users will be notified for each alarm condition.

Controlling outlets is another feature that the 4000 series products can perform. Using the optional PowerGate products, outlets can be switched on or off by the network of Hosts and Nodes. Outlets can be controlled either manually, or even automatically in response to specific alarm conditions. You can even automatically reboot network equipment when it stops responding.

Up to 128 network cameras can be integrated into the IMS-4000 system. Multiple images can be viewed from the Console View software, and snapshots can be sent attached to e-mails when alarms occur.

IMS-4000 Enterprise Host. IMS-4001

IMS-4000 Expansion Node
for Wired Sensors IMS-4002
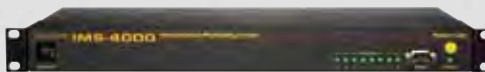
IMS-4000 PowerGate IMS-4301

IMS-4000 PowerGate2 . . . . IMS-4302

IMS-4000 Expansion Node
for Wireless Sensors. IMS-4200

Dual Relay
Output Module IMS-4310

INPUT SENSING:

- 8 built-in sensor inputs with up to 256 sensors using expansion Nodes.
- Uses smart, supervised IMS series sensors with Cat-5 connections.
- Automatic sensor identification and setup.
- Wireless sensors also available when using IMS-4200 Node.
- Built-in power failure monitoring.
- Built-in high sound level alarm.

EXPANSION:

- Up to 31 expansion nodes can be used with each IMS-4000 Host.
- Each Node can be an IMS-4002 with Cat-5 wired sensors, or an IMS-4200 with wireless sensors.
- Nodes can be located anywhere as long as there is network connectivity to the Host.

ALARM NOTIFICATION:

- Up to 64 User Profiles with 8 alarm contact methods for each.
- Each notification can be delivered by:
  - E-mail
  - Text message
  - Alphanumeric pager
  - Fax
  - SNMP trap

- Custom voice telephone calls.
- Voice calls include specific descriptions of alarms and sensor values.
- Alarms can be assigned to specific user profiles to direct responsibility.
- Programmable user scheduling.
- User grouping for alarm types.

IP MONITORING:

- Up to 64 network devices or servers can be monitored per Host and Node.
- Specific TCP port services can be monitored for connectivity and response.
- Lack of response generates an alarm notification.

USER INTERFACE:

- Built-in web server.
- Includes Enterprise software for managing multiple Hosts and Nodes.
- Built-In RAS Server.
- Two-Way E-mail Command Responder.
- Telephone voice command menu with network diagnostics and remote microphone listen-in.

SUPPORTED PROTOCOLS:

- Web page - HTTP, PDA, WAP, and XML.

- SNMP - MIB with Traps, GET, GETNEXT, and SET.

COMMUNICATIONS:

- Ethernet 10/100Base-T
- RJ-11 Telephone interface

DATA LOGGING:

- Up to 62,500 samples of time stamped data stored internally.
- Programmable sampling rate per input.
- Alarm events and notification details are also logged creating an audit trail.

IP CAMERA SUPPORT:

- Up to 128 IP cameras from third parties can be integrated.
- Alarms can trigger automatic image capture from IP cameras.

POWER REQUIREMENTS:

- 110 or 220 VAC power.
- Built-in rechargeable battery backup.

PHYSICAL PROPERTIES:

- Host - 19"W x 1.75"H x 9.5"D, 7.4 lbs.
- Node for wired sensors - 9.6"W x 1.8"H x 9.6"D, 3.12 lbs.
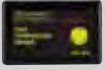- Node for wireless sensors - 7.6" x 5.1" x 2.0", 1.75 lbs.

Room Temperature Sensor

This temperature sensor is designed to monitor ambient air temperatures. User configurable to either °C or °F.

IMS-4810 . . . . Room Temperature Sensor

IMS-4811 . . . . . Room Temperature Sensor With Display(°F)

IMS-4813 . . . . Room Temperature Sensor With Display(°C)

IMS Mini Temperature Sensor

The mini temperature sensor is ideal for monitoring temperatures inside small cabinets or tight spaces.

IMS-4812 . . . . Mini Temperature Sensor

IMS Ultra Low Temperature Sensor

The ultra low temperature sensor is ideal for monitoring temperatures inside refrigerators or freezers. .

IMS-4814 . . . . Ultra Low Temperature Sensor

IMS Temperature Sensor with Glass Bead Vial

The glass bead vial will buffer any momentary fluctuations that may cause a preliminary alarm.

IMS-4815 . . . . . . Temperature Sensor with Glass Bead Vial

IMS External Probe Temperature Sensor

Monitors temperatures in areas where a traditional sensor won't fit.

IMS-4816 . . . . External Probe Temperature Sensor

IMS Room Humidity Sensor

The humidity sensor is used to monitor relative humidity in the computer room.

IMS-4820 . . . . Room Humidity Sensor

IMS-4821 . . . . Room Humidity Sensor with Display

IMS Water Detection Sensor

The Water Detection Sensor protects servers and equipment from damaging water leaks from malfunctioning HVAC systems, cafeteria accidents or general plumbing failures in the facilities.

IMS-4830 . . . . IMS Water Detection Sensor

IMS Power Failure Sensor

The Power Failure Sensor lets users monitor power anywhere within the infrastructure. It reports any loss of power and measures the current voltage in the circuit. Monitors voltage from 0-250VAC.

IMS-4840 . . . . IMS Power Failure Sensor

IMS Current Sensor

Monitors current consumption of a particular device or circuit anywhere in an infrastructure. It reports actual current flow in the circuit, allowing users to know the current draw from devices such as server racks, UPS and generators.

IMS-4841 . . . . 15 AMP Current Sensor

IMS-4842 . . . . 20 AMP Current Sensor

IMS Dry Contact Bridge

The Dry Contact Bridge allows users to connect a dry contact alarm from any device. It is compatible with normally open and normally closed contacts.

IMS-4850 . . . . Dry Contact Bridge

IMS 4-20mA Bridge

The 4-20mA Bridge allows you to connect a dry contact alarm from any device to your IMS. Compatible with normally open or normally closed contacts.

IMS-4851 . . . . 4-20mA Bridge

IMS Magnetic Reed Switch

The Magnetic Reed Switch enables the IMS system to detect if any unauthorized entry or intrusion has occurred.

IMS-4860 . . . . IMS Magnetic Reed Switch

Passive Infrared Detection Sensor
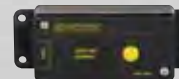
Used to monitor unauthorized access into data centers.

IMS-4861 . . . . Passive Infrared Detection Sensor

Smoke Detector

Used to monitor for smoke in indoor areas.

IMS-4862 . . . . Smoke Detector

IMS Airflow Sensor

The Airflow Sensor is designed to monitor for the presence of cool moving air. This sensor is especially useful for monitoring air conditioning systems. It provides relative airflow as a percentage from 0 to 100

IMS-4863 . . . . IMS Airflow Sensor

Security Camera

Small network camera ideal for monitoring data centers. Can be used to send camera snapshots when alarms are detected.

IMS-4424 . . . . Axis Camera

Wireless Temperature Sensor

Provides remote temperature sensing without running wires. Can be configured to monitor ambient air temperature or monitor temperature readings from an external probe.

IMS Wireless Temperature Sensor IMS-4210

IMS Wireless Temperature Sensor
with external Probe IMS-4210-E

Wireless Humidity Sensor

Provides remote humidity sensing without running wires.

IMS Wireless Humidity Sensor IMS-4211

Wireless Power Failure Sensor

Power status is monitored by a wall plug in adapter and sent from the sensor to the Wireless Node.

IMS Wireless Power Failure Sensor IMS-4213

Wireless Dry Contact Sensor

Provides remote contact monitoring without running wires.

IMS Wireless Dry Contact Sensor IMS-4212

Wireless 4-20mA Sensor

Provides remote monitoring of 4-20mA transducers without running wires.

IMS Wireless 4-20mA Sensor IMS-4214

Wireless Spot Water Detection Sensor

The sensor has four probes on the bottom of the enclosure that provide water detection monitoring.

IMS Wireless Spot Water Detection Sensor IMS-4215

Wireless Zone Water Detection Sensor

The sensor comes with 10' of leak detection cable which can be installed around equipment or under a raised flooring system. The cable can be linked together to cover 250'

IMS Wireless Zone Water Detection Sensor . . . IMS-4216

Product Comparison

	400/800	WSG-30	WEB600	IMS-1000	IMS-4000
Inputs	4 or 8	Up to30	6	8	8 to 256
Outputs	1	0	0	1	Optional
SNMP Manageable	No	Yes	Yes	Yes	Yes
Input Type					
Dry Contact	✓	(1)	✓	(1)	(1)
Thermistor	✓	(1)	✓	(1)	(1)
4-20mA		(1)	✓	(1)	(1)
Wireless Sensors		✓			Optional
IMS Sensors				✓	✓
I/O Expansion		✓			✓
Sound Level Monitoring	✓				✓
Remote Programming	✓	✓	✓	✓	✓
Alarm Notifications	4	32	32	64	512
Alarm Delivery					
Voice Phone Call	✓			Optional	✓
Numeric Pager	✓			Optional	✓
Alpha Pager				Optional	✓
Email		✓	✓	✓	✓
SMS Text Message		✓	✓	✓	✓
Fax				Optional	✓
SNMP Trap		✓	✓	✓	✓
Internal Web Server		✓	✓	✓	✓
Web Status		✓	✓	✓	✓
Datalogging		✓	✓	✓	✓
Communication	Phone Line	Ethernet	Ethernet	Ethernet w/Optional Phone Line	Ethernet plus Phone Line
Mounting	Table or Wall	Table or Wall	Table or Wall	Rackmount	Rackmount
Battery Backup	Requires 6 C Cells	✓	Optional	✓	✓
Monthly Fee	No	No	No	No	No

(1) Requires Correct Sensor   Specifications subject to change