ENGINEERING SPECIFICATIONS
SENSAPHONE IMS-1000
Updated 9/9/14

I. General

A. Summary

The monitoring system shall be a self-contained microprocessor-controlled device capable of monitoring 8 environmental input channels and 16 network IP devices. A programmable relay output shall be included. The system shall be integrated in construction and shall be installed and configured for operation by the user via the internal web page. Two versions shall be available - the IMS-1001 which is an Ethernet-only device and the IMS-1002 which also includes a telephone port to allow voice calling, faxing, and paging capability. Custom voice messages for input alarms and status messages (IMS-1002) can be recorded into the device by the user. Input channels shall be capable of interfacing with IMS series sensors via 8 RJ-45 jacks.

Upon detection of any alarm or status change, the system shall commence alarm delivery from a contact list and deliver the alarm message via a custom voice message, fax, e-mail, numeric pager, alphanumeric pager, or SNMP (telephone based notification only in IMS-1002). The voice alarm message shall be delivered in digitized human voice using messages recorded by the user. The system will continue to call telephone numbers in succession until a positive acknowledgment of the alarm message is received. Acknowledgment can be accomplished from a voice phone call or by logging in to the unit, via web page, or via SNMP management software.

The system shall have a three-year warranty from the manufacturer. The system shall be a Sensaphone IMS-1000 by Sensaphone.

B. Standards

The system shall meet FCC requirements Part 68 and Part 15, and shall be registered for direct connection to the telephone network. The system shall comply with the Telephone Consumer Act. The system shall be Canadian DOC certified.

C. Optional Equipment

The IMS-1000 shall have the following accessories and sensors available as options:

- Temperature sensors: IMS-4810, IMS-4811, IMS-4812, IMS-4813, IMS-4814, IMS-4815, IMS-4816
- Humidity sensors: IMS-4820, IMS-4821
- Water Detection sensor: IMS-4830
- External Power sensor: IMS-4840
- AC Current Sensor: IMS-4841, IMS-4842
- Airflow Sensor: IMS-4863
- Dry Contact sensors: IMS-4850
- 4-20mA sensor: IMS-4851
- Door switch sensor: IMS-4860
- Passive infrared detection sensor: IMS-4861
- Smoke detector sensor: IMS-4862

II. Product

A. Enclosure

The IMS-1000 shall be designed for the following mounting configurations:

- 1U rack-mount
- Table mount
- Wall mount (using optional flanges)

The dimensions shall be 14"W x 1.75"H x 7"D. The weight shall be 3.5 lbs.

B. Front Panel

The front panel of the IMS-1000 shall consist of eight Environmental Sensor Inputs with green and red LED status indicator lights, one Ethernet port with data transmission LEDs, one phone jack (IMS-1002 only), a relay output terminal strip, and LEDs each to indicate System On, Battery, Alarm and Output Status.

The eight sensor inputs shall be configured to interface with IMS series sensors.

C. Rear Panel

The rear panel of the IMS-1000 shall provide one power switch and one 2.1mm power connector.

III. Electrical Specifications

A. Power Source

The system shall operate from a 9VDC plug in wall adapter. The international version shall include a desktop power supply that operates from a 90-250 VAC 50/60 Hz with an IEC input connector. Typical power consumption shall be 10 Watts.

B. Battery Backup

The unit shalfl include an internal UPS that automatically switches to battery backup in the event of an AC power failure. The battery shall be a 6V 3.4AH gel cell, which will keep the unit operating for approximately 3.5 hours when fully charged and under normal operating conditions.

IV. Environmental Input Attributes and Features

A. Environmental Inputs

The system shall come standard with 8 environmental input channels designed to interface with IMS series sensors. The input resolution shall be 12-bit. All input values shall read to one decimal place.

The system shall have the following built-in monitoring features:

1. AC power failure detection
2. Low battery detection

All monitored channels, including built-in monitoring features, shall allow local and remote data programming of pertinent operational data including, but not limited to:

1. Input name
2. Input calibration
3. High and Low limits
4. Input recognition time
5. Alarm reset time

6. Data logging

7. Alarm on Return-to-Normal

8. Master Enable/Disable for each channel to dial out for alarm

V. IP Monitoring Attributes & Features

The system shall be capable of monitoring up to 16 network IP devices through pinging and port availability. In addition, IP dependencies can be programmed to prevent multiple alarm messages from being sent when common network paths are down. The IMS-1000 will "test" the programmed IP Address (or Domain Name) on a configurable interval. If the address fails to respond the IMS-1000 will go into alarm and notify you of the problem.

All monitored channels shall allow programming of pertinent parameters including, but not limited to:

1. IP Enable/Disable

2. Alarm Delivery Enable/Disable

3. Input Description

4. IP/Host Address

5. Custom Response

6. Alarm Timeout

7. Number of Retries

8. Time between attempts

9. Dependency

10. Custom Voice Message

11. Alarm Reset

12. Alarm on Return-To-Normal

13. Data Logging

VI. Relay Output Attributes & Features

The Relay Output provides a Normally Open/Normally Closed contact that can be connected to an external device (i.e. Light, siren, aux system, etc). The output can be programmed to activate when one or more specific alarms are detected or it may be controlled manually from the IMS-1000 web page or via touch–tone telephone. The output is rated for 1A 30VAC or 1A 24VDC.

The Relay Output shall allow programming of the following parameters including, but not limited to:

1. Operating Mode: Manual, Automatic

2. Custom alarm list to activate the output (Automatic mode)

VII. Communications Features

A. Communication Methods

The system shall be able to communicate alarms and other status information using the following methods.

1. Programmable voice (IMS-1002)
2. Fax (IMS-1002)
3. Numeric pager (IMS-1002)
4. Alphanumeric pager (IMS-1002)
5. Internet E-mail
6. Web page
7. SNMP

B. Telephone Specifications (IMS-1002)

The system shall connect to a standard 2-wire telephone line using tone dialing methods, with loop start only. The system shall recognize ringer frequencies from 16 to 60 Hz. No leased or dedicated lines shall be required. Call progress detection shall ensure that the alarm dialout is not hindered by no-answers or busy signals.

C. Communications Interface

The system shall have a built-in 10/100Base-T ethernet port for network communication via web page, e-mail, and SNMP.

D. User Profiles

The system shall be accessible by up to 16 users. Each user shall have configureable permissions for security purposes. Each User shall have up to 4 contact destinations in the event of an alarm.

E. Contacts (Telephone Numbers, E-mail Addresses, Pager Numbers, etc.)

The system shall be capable of delivering alarm messages to up to 4 contacts (36 digit telephone numbers /64 character e-mail addresses) per User Profile.

F. Voice Messages (IMS-1002)

The system shall have the ability to record, store and reproduce voice messages and to use those messages to articulate the location and status of the monitored sensors and conditions. In absence of user-recorded voice messages, the system shall articulate status using the internally resident vocabulary of default messages associated with each sensor type.

There shall be one recorded identification message for the system, and one recorded alarm message for each sensor input and IP alarm.

G. Web Status

The software shall be capable of producing a web page that includes: the status of all environmental inputs and IP alarms; logged data for each input and IP alarm; historical alarm information for each input and IP alarm; graphs of logged data; and live images from any associated video camera. The IMS-1000 shall be capable of automatically delivering a copy of the web page to a remote web server via FTP for viewing on another network.

VIII. Configuring and Programming

A. Configuring Network Settings

The IMS-1000 will attempt to obtain an IP address using DHCP if it's available, otherwise the device will default to a fixed IP address. A software application shall be included to locate the IP address of the device on the network.

B. Programming

The IMS-1000 shall be completely programmable through the devices's internal web page.

IX. System Features

A. Local Visual Indication

Each sensor input shall include corresponding green and red LEDs that will indicate the present status of the input. The system shall also include two LEDs to indicate Ethernet received data (green) and transmitted data (yellow), and LEDs for System On, Battery Ok, Output and Alarm.

B. Datalog

The system shall be capable of logging the values of all environmental inputs, the battery voltage, AC power status and IP Alarm history. Items to be stored shall be selectable to maximize memory usage. Up to 100,000 total samples can be stored in the unit's nonvolatile memory. The time between logs shall be user-programmable. The datalog history shall be viewable through the web page. If the Datalog fills up, it will overwrite the oldest data first. It shall be possible to export the datalog and eventlog history.

C. Security

Each User Profile shall have a programmable security level. There shall be three levels of access: Administrator, Status, and User.

X. Remote Operation Features

A. Status Report & Touch-Tone Commands (IMS-1002 only)

The system shall allow the user to call into the unit at any time using any standard telephone to obtain a full spoken status report. The report can provide information on both environmental conditions (sensors) and IP alarms. The status report shall be articulated using the resident voice-synthesized English vocabulary, in combination with digitized user-recorded voice messages. The relay output can also be controlled via touch-tone command.

B. Voice Acknowledgment

An alarm on any monitored channel may be acknowledged remotely by pressing tones on a touch-tone telephone keypad.

C. Data Acknowledgment

An alarm on any monitored channel may be acknowledged via the IMS-1000 web page.

D. SNMP

The device shall contain an SNMP agent that supports V1 and V2c versions of SNMP. The SNMP Agent shall be enabled or disabled via configuration options. Read and write access to most IMS-1000 parameters shall be provided, as well as the ability to send traps when alarms occur.

XI. Environmental

A. Electrical Protection

Power and telephone connections shall have internal spike and surge protection using metal oxide varistors. All environmental input channels shall have fault protected input circuits.

B. Additional Electrical Surge Protection

Additional Power and Telephone line surge protection shall be available from the manufacturer. When so installed, the system shall be fully warranted against any damage caused by transient surges entering the system through Power or Telephone lines.

C. Environmental

The system shall function over an operating temperature range of 32°F–122°F at up to 5–90% RH, non-condensing.

D. Maintenance

The system manufacturer shall have in-house service facilities and technical assistance available during normal business hours, Monday–Friday 8am–5pm(EST).

Specifications subject to change without notice.

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Sensaphone.
901 Tryens Road

Aston, PA 19014

Phone: 877-373-2700

FAX: 610-558-0222