ENGINEERING SPECIFICATIONS

SENSAPHONE® SENTINEL SCD-1200

I. GENERAL

The Sensaphone Sentinel shall be a self-contained microprocessor controlled environmental monitoring system capable of monitoring up to 12 alarm channels (zones). The system shall be configured for operation by the user by means of the Sensaphone.net website and/or the Sensaphone mobile App for Android and IOS. Characteristics of the Input and Output Zones include 12 Universal Inputs and 1 Relay Output. Upon detection of any alarm or status change, the system shall commence the alarm notification process which includes dialing telephone numbers from a list associated with the particular alarm condition(s), and delivering a voice message* identifying and describing the alarm condition(s) as well as sending text messages*, and email notifications describing details of the alarm and its location. The system shall contain a rechargeable NiMH battery pack to maintain full operation of the device for up to 8 hours in the event of a power failure. The system shall contain a 10/100BASE-T Ethernet port for connection to an Ethernet network with Internet connectivity. The system shall utilize encrypted data transmission for secure communications to the Sensaphone.net server system. The system shall comply with Part 15 of the FCC rules for radiated and conducted emissions as well as the Canadian Interference Standard (ICES-003) for information technology equipment (ITE). The system shall have a two year warranty from the manufacturer. The system shall be a Sensaphone® Sentinel SCD-1200 by Phonetics, Inc. dba Sensaphone.

* Voice telephone calls and text messages shall require a premium Ethernet subscription.

II. I/O CHANNEL ATTRIBUTES AND FEATURES

A. Inputs

The system shall come standard with 12 universal input channels. All input channels shall be user-configurable as:

1. NO or NC digital dry contact, using internal 3.3V source voltage
2. Temperature from thermistor, using 2.8K or 10K devices
3. 4–20mA analog, using custom look-up table
4. NO or NC Pulse Count with configurable multiplier
5. NO or NC Run-Time Accumulator

The system shall have the following additional monitoring features:

1. Built-in AC power failure detection
2. Low battery detection
3. Device offline detection

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

1. Zone Name
2. Zone Type (NO/NC, 2.8K/10K thermistor, 4-20mA, pulse count, run-time accumulator)
3. Zone Calibration
4. High and Low Alarm Limits (-2,000,000 to 2,000,000)
5. Alarm Recognition Time (0 seconds to 8 hours)
6. Alarm Hold Time (1 second to 60 minutes)
7. Alarm Reset Time (1 minute to 8 hours)
8. Alarm on Return-to-Normal

9. Alarm Delivery Contact List (Phone numbers, text numbers, email addresses, etc…) for each zone

10. Alarm Delivery Enable/Disable for each channel to send notifications for alarms

11. Zone Enable/Disable

B. Output

The system shall have one built-in SPST 1A 30VDC/VAC relay output. The output may be programmed to switch either manually (via the website or App) or automatically using one of the following modes:

(a) Activate or Deactivate as soon as one or more selected zones exceeds the alarm limits (regardless of recognition time). Reverts when the alarm condition no longer exists.

(b) Activate or Deactivate when one or more selected zones becomes an alarm (recognition time enforced). Reverts when the alarm condition no longer exists.

(c) Activate or Deactivate while one or more selected zones has an unacknowledged alarm. Reverts once the alarm is acknowledged.

(d) Activate when a selected zone is either greater than, less than, or equal to a user configurable value and Deactivate when a selected zone is either greater than, less than, or equal to a user configurable value.

III. NETWORK COMMUNICATIONS

The System shall contain a 10/100BASE-T Ethernet port for communication to the Sensaphone.net server system. The System shall require a continuous connection to the internet in order to operate. The system shall require DHCP network protocol support for initial configuration. The System shall require outbound access on network ports 123 (NTP Time synchronization) and 443 (secure data communications). LED indicators shall be provided to indicate when the unit is online with the Sensaphone.net server system.

IV. PROGRAMMING

The System shall be fully programmable through the Sensaphone.net website. A mobile App for Android and IOS shall be provided to permit live system status as well as limited programmability.

V. ALARM NOTIFICATION

The system shall send alarm notification messages via email at no charge. Optionally, alarm messages may be sent via text message and/or voice telephone call with a paid premium Ethernet subscription. Alarm messages will be delivered in English. Alarm messages sent via telephone shall be delivered in digitized human voice using text-to-speech technology. The system will continue to call telephone numbers and send text and email messages in succession until a positive acknowledgment of the alarm message is received. Acknowledgment is accomplished by entering a numeric code from the called telephone, or by replying to a text or email message, or by logging-in to the website or App and requesting acknowledgement. The alarm may also be acknowledged by pressing the 'Acknowledge' button on the Sentinel device itself. The system will call each programmed telephone number up to 4 times. Once the alarm is acknowledged the system shall halt the dialing process. The system shall allow for an unlimited number of users with an unlimited number of contact methods per user. The system shall allow for tiered alarm delivery schedules so that a time delay may be inserted between tiers.

VI. DEVICE SUPERVISION

The Sentinel device(s) shall be supervised by the Sensaphone.net server system. If a device stops communicating with the server for a specified period of time the system will notify selected users of the problem. When the device resumes communication with the server an optional 'return-to-normal' message will be sent.

VII. DATA LOGS

The system shall allow monitored zone values to be periodically stored in system memory at a programmable interval from 1 minute to 24 hours. Stored values shall be uploaded to the Sensaphone.net server system on a periodic basis (approximately once per hour) for permanent storage. Users shall have the capability of querying logged data values from the Sensaphone.net website and downloading the displayed data. The device shall be capable of storing up to 130,000 data points (or up to 6.5 days logging all zones at the minimum interval) in internal memory.

Premium Ethernet subscribers shall have unlimited access to logged data on the Sensaphone.net server system. Non-subscribers shall be limited to 30 days of historical data.

VIII. ALARM HISTORY LOGS

The Sensaphone.net server system shall maintain a log of all alarm events. The system shall also maintain a log of all alarm notifications including the users name, type of delivery (email, phone, text), and telephone number/email address.

IX. SYSTEM FEATURES

A. Power

The system shall be provided with a UL/CSA listed 12VDC power transformer with USA style blades that the user may plug into a 100-240VAC outlet, 50/60HZ. An international version shall be available (SCD-1200-INT) that contains an international power adapter with multiple interchangeable AC blades for use worldwide. The system shall monitor for the presence of primary 12VDC power and shall be capable of generating an alarm if main power should fail.

B. Battery Backup

The system shall have a built-in rechargeable nickel-metal-hydride battery pack. The battery pack shall provide up to 8 hours of continuous system operation in the absence of AC power. (Actual battery backup performance is dependent upon the age of the battery, the ambient temperature, and the charge condition). The system shall also contain a long-life lithium battery (type CR2) to maintain the system clock, as well as certain dynamic zone values such as pulse count, runtime, and min/max values. The lithium battery shall last 4 years or more depending on use.

C. Visual Indicators

Each zone input shall have a corresponding LED that will indicate the alarm and acknowledgment status of each zone. The system shall also have a ‘Power’ led to indicate if the device is powered on. An ‘Online’ LED shall be included to indicate if the device is online with the Sensaphone.net server system. A ‘Standby’ LED shall be included to indicate if the device is operating in Standby mode.

D. Standby

The system shall be capable of operating in Standby mode. In Standby mode any detected alarms will be ignored, however, monitored values will continue to be displayed on the website and on the mobile Apps. The data logger will continue to store values while in Standby mode. Standby mode can be configured to run for a preconfigured time period in which case it will return to normal mode automatically, or it may operate in ‘untimed’ mode in which case it must manually be returned to normal mode. Users can enter or exit Standby mode through the website, the mobile App, or using the Standby button on the front panel of the device.

X. ENCLOSURE AND ENVIRONMENTAL

A. Enclosure

1. The base unit (SCD-1200) shall be housed in a plastic enclosure.

   Dimensions: 5.5” x 6.3” x 1.5” (140 x 160 x 38 mm), 1 lb. (0.45kg)

2. The SCD-1200-CD shall be housed in a NEMA 4X/IP66 polycarbonate enclosure with a clear cover.

   Dimensions: 12.17” x 10.25” x 3.5” (309 x 260 x 89 mm), 3.7 lb. (1.67 kg)

3. The SCD-1200-SD shall be housed in a NEMA 4X/IP66 polycarbonate enclosure with an opaque cover.

   Dimensions: 12.17” x 10.25” x 3.5” (309 x 260 x 89 mm), 3.7 lb. (1.67 kg)

B. Electrical Protection

The Power input shall be protected against voltage surges with a metal oxide varistor. The Ethernet port shall be protected against voltage transients with low capacitance transient suppressors. The zone inputs shall be protected against voltage surges using metal oxide varistors and low-voltage diode clamping circuits.

C. Environmental

The system shall function over an operating range of 32°F to 122°F (0° to 50°C) at up to 0–90% RH, non-condensing. The system may be stored over the temperature range of 32° to 140°F (0° to 60° C).

D. Maintenance

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

*Specifications subject to change without notice.

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