

ENGINEERING SPECIFICATIONS

SENSAPHONE® EXPRESS II

I. General

The Automatic dialer shall be a self-contained microprocessor controlled system capable of monitoring and controlling up to 40 alarm channels. The system shall be modular in construction, allowing up to 4 input/output Expansion Cards to be installed and configured for operation by the user by means of the built-in keypad and remotely by touch-tone phone. Characteristics of Input and Output channels include Universal Input and Digital Relay Output.

Upon detection of any alarm or status change, the system shall commence dialing telephone numbers from a list associated with the particular alarm condition(s) or combination thereof, and deliver a voice message identifying and describing the alarm condition(s). The 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 is accomplished by depressing tone keys from the called telephone, or by calling the system back within a programmed time period. The alarm may also be acknowledged using the local keypad. In addition, the system shall be able to receive incoming telephone calls. Upon answering, the system shall recite a menu of options and allow access to remote operation and programming.

The system shall be FCC registered for direct connection to the telephone network. The system shall have a one year warranty from the manufacturer. The system shall be a Sensaphone® Express II by Phonetics, Inc.

II. I/O Channel Attributes and Features

A. Inputs

The system shall come standard with 8 universal input channels. Up to 32 additional universal input channels may be installed by the user. All input channels shall be user-configurable as:

1. NO or NC digital dry contact, using 0.8mA loop current
2. 4-20mA analog, using custom look up table
3. 0-5V analog, using custom look up table
4. Pulse count
5. Temperature from thermistor, using 2.8K or 10K devices (-80°F to 300°F)
6. Time accumulator

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

1. AC power failure detection
2. Sound level monitoring
3. Low battery detection

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

1. Input type (NO/NC, 4-20mA and 0-5V analog, pulse count, thermistor, time accumulator)
2. High and Low limits (-9999 to +9999)
3. Input recognition time (0 seconds to 12 hours)
4. Alarm reset time (0 seconds to 12 hours)
5. Phone Contacts list for each channel
6. Enable/disable for each channel to dialout for alarm

B. Outputs

The system shall have one built-in SPST latching 2A 250VAC relay output. The output may be programmed to switch automatically on alarm or manually via keyboard or Touch-Tone™ phone. Up to 16 additional relay output channels may be installed by the user.

III. Communications Features

A. Telephone Specifications

The system shall connect to a standard 2-wire telephone line using pulse or 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. The system shall also be capable of being used on the same telephone line as other answering devices. Call progress detection shall ensure that the alarm dialout is not hindered by no-answers or busy signals.

B. Telephone Numbers

The system shall be capable of dialing up to 48 telephone numbers, 40 digits each. There shall be a capacity to program, retain and use three separate lists based on a calling schedule of weekday, weeknight and weekend. Each list shall contain up to 16 phone numbers. In addition, individual phone contact lists may be programmed for each input channel.

The system shall allow local keypad and remote touch-tone programming of the following telephone dialing information:

1. Dialing method (Automatic, pulse, tone)
2. Retries on busy (0 to 15)
3. Message repetitions (0 to 10)
4. Maximum number of calls (0 to 65,535)
5. Call delay time (0 seconds to 12 hours)
6. Intercall delay time (0 seconds to 12 hours)

C. Voice Messages

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 channels. In absence of user-recorded voice messages, the system shall articulate channel status using the internally resident vocabulary. All digitized speech message data shall be stored in nonvolatile memory with a 3V lithium battery backup. Such battery backup shall be capable of protecting speech memory for at least 2 years of complete power outage.

There shall be one recorded identification message for the system, and one recorded alarm message for each input channel. A message may also be recorded for each output channel on the optional output expansion card. Message length shall be selectable from 5 to 11 seconds per input or output channel.

IV. Programming

A. Local Programming

The System shall contain an integral, sealed, alphanumeric keypad for the purpose of locally programming all system data. Programming is assisted by synthesized voice guidance. All operational data, system setup and configuration data, and all information regarding the monitored I/O channels shall be displayed on the LCD display panel. No display manipulation shall be required to view and assess the status of I/O points.

B. Remote Programming

The system shall be remotely programmable using a standard touch-tone telephone. All operational data, system setup and configuration data, and information regarding I/O channels shall be accessible and programmable. A user-programmable security password shall protect the system from unauthorized tampering. Remote programming shall be aided by menu-style voice guidance.

V. System Features

A. Power

The system shall be provided with a UL/CSA listed 15VAC grounded power transformer that the user may plug into a 120V AC outlet, $\pm 20\%$, 60HZ. The unit shall provide battery backed 12 volts DC (up to 100mA) and 24 volts DC (up to 400mA) to power 4-20mA current loops or other external devices.

B. Battery Backup

The system shall have a built-in 12V 3 AH sealed lead-acid rechargeable battery. This battery shall support approximately 6-12 hours of continued system operation in the absence of AC power. (Actual battery backup performance is dependent upon the age of the battery, the ambient temperature, the charge condition, and the number of external devices being powered by the system.)

C. Local Visual Indication

Each input shall have a corresponding LED that will indicate the alarm and acknowledgment status of each input. The system shall also have an LCD display that will list information about the current system status and input/output status.

D. Data Log

The system shall be capable of logging the input values on a user-defined time period via a serial printer. The system shall also log all system and alarm activity including, but not limited to: programming changes, alarms occurring and clearing, acknowledgments, call-ins, and alarm dialouts. The system shall be able to print the log information to a printer hooked up to its built-in RS232 serial port.

E. Halt Mode

The system shall be capable of entering a halt mode upon user command in which all inputs shall be disabled and dialout prevented. Halt mode shall end automatically after a preprogrammed time period.

F. Diagnostics and Testing

System diagnostics shall be performed each time the unit is started. The system shall be capable of performing a simulated alarm dialout for testing. The dialout can be requested locally or remotely.

G. Security

The system shall allow the user to lock the keypad to prevent unauthorized local or remote access unless a security password is entered.

VI. Remote Operation Features

A. Status Report

The system shall allow the user to call into the unit at any time using any standard telephone to obtain a full status report of all monitored channels. The status report shall be articulated using the resident voice-synthesized English vocabulary, in combination with digitized user-recorded voice messages.

B. Acknowledgment

An alarm on any monitored channel may be acknowledged remotely by pressing tones on a touch-tone telephone keypad or by calling the system back within a specified time period. An alarm may also be acknowledged locally using the built-in keypad.

VII. Enclosure and Environmental

A. Enclosure

The system shall be housed in a NEMA-4X fiberglass enclosure with a latched window cover and shall be internally constructed such that modular plug-in expansion cards may be used to facilitate field upgrades, repair, and maintenance.

B. Electrical Protection

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

C. 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.

D. Environmental

The system shall function over an operating range of 32°F - 120°F at up to 0 - 90% RH, non-condensing. The system may be stored over the temperature range of 0° - 130°F.

E. Maintenance

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

F. Safety Approvals

The system shall be approved by a Nationally Recognized Testing Laboratory (NRTL) to UL Standard 1950 "Information Technology Equipment" and CSA Standard 22.2 #950.

Specifications subject to change without notice.
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