

ALPHASENSE MODEL AS100-SP

AlphaSense model AS100-SP is a microprocessor-based unattended monitoring and information delivery/forwarding system that will automatically create and deliver information to wireless devices such as alpha pagers and/or other data equipment (may be unattended), such as PC's, printers or terminals. It may be used in a wide variety of applications. For alpha-pager messaging, this model expects all paging receivers to be on a single paging-carrier system. Model AS100-SP obtains information by scanning its bi-directional data port. Further, provisions to sense and report on external power failure and subsequent restoration is built-in. When AlphaSense is triggered, either by user-specified data appearing at the data port from host equipment, or from the internal sensing systems, it will formulate and deliver a user-specified informational message via its internal modem to user-specified "destination."

The "destinations" may be a mix of any of the following: alphanumeric pagers, digital celphones, SMS-capable receptors, other wireless messaging platforms such as laptops, palmtops, PDA's, and more. AlphaSense can also be instructed to deliver its messages to fixed data devices - either wired or wireless, such as logging recorders, unattended PC's, remote printer stations, etc. Information or message delivery to multiple wireless device, or data destinations may be configured by the user. All incoming events are timestamped and stored in a memory log for user viewing or download.

The primary information source for model AS100-SP is a serial data port, capable of interfacing to any type of equipment or system which supports the industry-standard RS-232 serial data connection. The user specifies phrases, symbols, or keywords to "watch for" out of all the data flowing into the AlphaSense serial port. Information received via the serial port is stored within AlphaSense for on-demand user retrieval. When the watched-for data is received within the datastream arriving from the equipment connected to it, AlphaSense will formulate and deliver a descriptive message (or forward an exact copy of the data itself) via its internal modem to the desired "destination."

Model AS100-SP provides two additional self-contained sensing systems which report high-priority alarm messages for user-scheduled "Well-Check" reports, as well as External Power Lost and Power Restored reports. Well-Check reports are delivered either once or twice during each 24-hour period (or may be disabled). Message delivery may be done using an industry-standard error-correction method for data delivery, and uses the appropriate error-management routines for wireless message delivery, as needed for the system it is delivering to.

The Well-Check feature is extremely valuable for the following reason: If an unattended monitoring device is getting no alarms from its input source, it never has to report out. So, what if the monitoring device itself fails? The user will never know, and blindly carries on thinking everything is problem-free at the monitored site. Worse, if an alarm does occur, it will not get reported, due to the monitoring devices failure. The AlphaSense scheduled self-test and Well-Check report eliminates all of this uncertainty with a simple assurance message delivered to wherever the user specifies.

When its external power fails, AlphaSense model AS100-SP is capable of continued operation for a minimum of 24 hours, assuming two message deliveries are performed every hour. In less demanding applications, AlphaSense can operate for several days using its own internal rechargeable power. Also, additional state-of-the-art internal power backup provides complete memory and data storage protection for up to 5 years. Compuquest believes that security is an important aspect of modern communications products. AlphaSense is password-protected with advanced encryption processing for security against any unauthorized access. AlphaSense supports total data security: All messages, telephone numbers, system access information, and other data entered during user programming, as well as any stored data from the serial port are internally encrypted, and are IMPOSSIBLE to

unscramble or extract by an unauthorized user. Any equipment which the user connects to the serial port of AlphaSense is also protected from unauthorized access once passwords are set.

Installation and software setup of AlphaSense is simple and quick. Following the physical installation of AlphaSense at the desired location, all further setups and instructions may be done from nearly anywhere using a PC or terminal with a modem, and any communications software. This advanced "remote re-configuration" is a powerful feature and allows for the re-definition and re-instruction of AlphaSense at any time after it is installed. The powerful flexibility of AlphaSense enables it to perform valuable tasks unattended, and provide information only when required. AlphaSense is an efficient time and resource saver. For all its advanced capabilities, AlphaSense has been designed with the user in mind. Once password access is achieved by the user, simple, easy-to-follow menus prompt the user for the required information, and then AlphaSense performs the complex internal configurations automatically. User entries may be changed at any time, and AlphaSense screens the user's inputs to prevent errors.

ALPHASENSE Model AS100-SP DETAILED SYSTEM DESCRIPTION

AlphaSense contains advanced microprocessor-based electronics which oversee all functions of the system. These include scanning and monitoring the serial data port, automatic sensing of external power loss/restoration, 5-year crashproof data retention, data encryption/decryption, and RS-232 serial communications. The AlphaSense internal master clock provides time and date stamping of input occurrences and report deliveries, and is also used in conjunction with the user-scheduled reports such as the Well-Check. AlphaSense uses a real-time operating system which features a completely interrupt-driven detection method so that task separation is maintained between concurrent processes.

AlphaSense model AS100-SP circuitry uses 12-18 VDC at 200 Ma. for its external power, and comes equipped with a U.L. approved power supply module that connects to a standard 120 V.A.C. outlet. Telephone line connection is made via back-panel RJ-11C connector. This connection is usually made to a standard dialup telephone line, but may also be connected to a PBX extension line, key system, virtual PBX, or cellular phone interface in applications where desirable.

Model AS100-SP has its own internal "Un-interruptable Power Supply", which provides for continued AlphaSense operation when external power fails. In the event of complete power loss, including a dead or damaged battery, AlphaSense can retain all its internal data for up to 5 years. When power is again connected, it will restart precisely where it left off when the damage occurred! AlphaSense's self-contained power monitor immediately delivers an alarm message whenever AlphaSense loses its externally-supplied power, and a different message when power is restored.

Messages are prefaced with a user-defined "Site-ID" text, so that if multiple units are reporting identical alarms, it is easy to confirm the exact origination. All input messages and numbers are completely user-programmable and may be changed at any time.

Model AS100-SP connects to a data source through an industry-standard RS-232 serial port (or to a centronics parallel "printer" port, using an optional adapter). AlphaSense will scan and monitor the the data stream arriving at its data port. If any portion of this data matches one of the user-programmed "matchstring" character or phrase sequences, a message is delivered immediately to the user-chosen destination. Or, the user may invoke the "Data Forwarding" feature in which an exact copy of the data from the host equipment which caused the match, is delivered as the message content. This powerful feature provides "wireless extension" to an alarm printer output, screen message, or other source which would otherwise only be available on-site. Additionally, data received at the serial port is stored in a history log, and may be viewed or downloaded by the user at any time. A special "Direct-Mode" provides

the user a direct connection through AlphaSense to the connected equipment. To access this mode, the user calls into AlphaSense from any modem-equipped PC, laptop, or other terminal device, selects this mode from the Main Menu, (or enters it directly, using a special password) and then may communicate with the connected equipment directly. Using this feature, a technician could be alerted by AlphaSense as a result of specific data arriving at the port, then the technician remotely dials into AlphaSense, and is able to interact direct with the host to make repairs, change host equipment configuration, etc. The serial port may also be used as the output for message delivery, so that AlphaSense may interact directly with on-site paging terminals or other equipment, via direct connection. ...a special section at the end of this document further explains "matchstrings" and how they work.

For alarm and message delivery, AlphaSense features intelligent delivery detection, with up to 9 retries on both primary and secondary destinations to help ensure delivery. When dialing out, AlphaSense employs advanced dialing routines and will sense dial tone and second dial tone, and allow mixed pulse dialing and tone dialing in telephone numbers. Sophisticated call-progress detection and processing sorts out line noise, "busy" and "circuits busy", and will detect a voice answer at the called number. All such cases would be processed for re-delivery, as would errors, faults or validation failures at the wireless messaging provider's system equipment.

Model AS100-SP is upgradeable to other models in the AlphaSense product line.

First-time Purchasers

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...How do the AlphaSense Model AS100-SP "Matchstring" Data Triggers Work??

Here's an Example:

...There are many types of "automation equipment", ranging from PC's to manufacturing process control systems, to alarm systems, which routinely send information out through a standard RS-232 serial port, parallel printer port, etc. Simply connect AlphaSense to the data port of the host equipment. Then, suppose the user sets AlphaSense to trigger on these "matchstrings": REJECT, ERR, and STAT. ...and let's say these are some of the data strings which might be output from the host at any time...

- Message 1: Offshore platform drill 2B at high temperature.
- Message 2: Stamping machine 6 reject level exceeded.
- Message 3: Computer Room Cooling Failure - Error Code 10.
- Message 4: Chlorine tank 5 - OSHA environmental limits in range.
- Message 5: Lockdown at guardstation for cellblock W7 confirmed.
- Message 6: Lab test PH status report - Acid bath low error condition.
- Message 7: Unauthorized entry at door 12 - CardReader ID invalid.

Each data message received from the host is scanned to see if it contains any of the matchstrings. Messages 2,3,5, and 6 each contain a matchstrings, so immediately on their arrival, AlphaSense delivers an exact copy of those messages to the user-specified "destination (s)" !! ...And different recipients can be chosen for each matchstring, action, so that the proper people get alerted for each topic.

This example illustrates the AlphaSense "data forwarding" feature, where the actual data from the host equipment was used as the message contents. Alternatively, the user could specify a fixed content message which would always be delivered each time the appropriate "matchstring" was detected in the host's data stream.

In this example, the data port of the user's equipment would probably have been connected to a printer to show the data messages. Of course, people would have to be at the printer to read the message. By adding AlphaSense, all the host data is intelligently scanned for content which the user(s) want to be informed of, and important data is quickly delivered to the right people wherever they may be!