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INTRODUCTION

The Sensaphone Model 3300 is an electronic watchman designed for industrial and commercial applications. It will monitor, record, and act upon various inputs. The 3300 will also report (in English) status and alarm conditions over a phone line by means of a voice synthesizer. The 3300 can communicate over the phone line to a computer or data terminal with its self-contained modem.

With voice mode, you can program and interrogate the 3300 with the keys on a touch-tone telephone. With the touch-tone telephone, you may also remotely adjust the state of any output device.

The Model 3300 is a multipurpose device which functions as the following:

- ♠ Alarm dialer
- ♠ Facility monitor
- ♠ Security alarm
- ♠ Energy manager
- ♠ Data logger

Typical applications include:

- ♠ Monitoring of equipment at remote communication huts.
- ♠ Warning of temperature problems at greenhouse.
- ♠ Power failure detection in computer rooms.

HARDWARE INFORMATION

SELF-CONTAINED SENSORS

The 3300 contains circuitry to check AC power.

USER I/O

The 3300 comes with 3 alert inputs, which are used to monitor any *normally open* or *normally closed* dry contact sensor. When the *normal* condition of a sensor changes, the 3300 will dial-out with an alert message and/or activate an output device.

The 3300 also offers 3 status-only inputs. A change in the condition of the sensor will not cause an alert dial-out. However, the 3300 will give the status of the inputs when properly interrogated.

There are also 2 analog inputs. Either one can be configured to sense temperature (range -20° F to +150° F), current (range: 4 to 20 milliamps) or voltage (range: 0 to 5 Volts). You program the 3300 with the high and low limits that the monitored condition must stay between. If the condition goes above or below the set limits, the Sensaphone will dial-out with an alert and/or activate an output device.

The 3300 has 3 output channels. Each channel can be either remotely controlled or programmed to be internally controlled by an alert condition or an analog limit. Output 1 can also be configured to be time-dependent.

The inputs and outputs can be used as complementary functions to facilitate the monitoring and control of your property. For example, attach a water level sensor to an alert input and a water pump to an output. The 3300 can be programmed to turn on the water pump if the water level gets too high, as well as optionally dial-out with an alarm. By using a flow meter on analog input and a valve on one of the outputs, you can program the 3300 to turn off a valve if the flow meter reads too high.

THE ALERT INDICATOR LIGHT AND ALERT CANCEL BUTTON

The 3300 has a red light (LED) that is used to indicate the 3300's state. While the unit is in its normal operating mode, the LED glows steadily. When there is an unacknowledged alert, the LED will blink quickly. When the 3300 is on-line, the LED will blink slowly. When more than one of these conditions exists simultaneously, on-line status (slow blink) gets priority.

The LED is also the local alert cancel button. When it is pressed, any dial-out calls in progress will be terminated. Any unacknowledged alerts will also be acknowledged. However, the 3300 can be programmed so that only certain alerts can be canceled with the button.

THE 3300 ENCLOSURE

The 3300 is designed to be set on a desk- or table-top.

3300 SPECIFICATIONS

SIZE

5 1/2 inches wide, 1 1/2 inches high, 8 inches deep.

SHIPPING WEIGHT

3 lbs

BATTERY SYSTEM

9 Volt 0.08 amp-hour sealed rechargeable battery. Life of approximately 30 minutes with AC power off. Battery service should be performed by qualified personnel only.

AC CONNECTION

UL-listed wall transformer with six foot cord.

TELEPHONE CONNECTION

Standard modular connector (RJ11C) with a six-foot cord.

OPERATING CONDITIONS

The 3300 should not be operated in temperatures less than +20° F nor more than +120° F.

It is not weatherproof and should be operated in a clean, dry environment.

Do not use the 3300 in an environment where it is exposed to fumes or corrosive vapors. They might damage the unit, causing it to malfunction, and void the warranty.

POWER SURGE PROTECTION

Your 3300 may be damaged or destroyed by uncontrolled current surges through the phone lines or the 110 VAC power supply. Your 3300 is protected against most surges. However, power surges and lightning may exceed this level of protection.

We strongly recommend that you obtain additional protection for any electronic equipment which is attached to your power supply and telephone lines. This is especially important if you live in a lightning-prone area.

IMPORTANT!

The Sensaphone Model 3300 should be periodically checked to ensure proper operation in your particular installation. If you are using external sensors, their operation must be checked periodically as well. The system with its sensors (if any) should be COMPLETELY checked monthly to ensure proper operation.

Always disconnect all telephone lines from wall outlets before servicing or disassembling this equipment, or replacing batteries.

FEATURES

The 3300 will dial-out with an alarm whenever the analog limits are exceeded, the alert inputs condition changes, or the power fails. An analog alarm will cause the 3300 to dial-out instantly. The alert inputs and power failure monitor will cause an alert dial-out after the condition has existed for a user-programmed amount of time

(the *recognition time*). If the call is not answered, the 3300 will wait a user-programmed length of time before dialing-out again.

UNINTERRUPTABLE POWER SUPPLY (UPS)

In the event of an AC power failure, the 3300 will automatically switch to its internal battery system, then dial-out to you with a warning. The battery back-up will function without a recharge for approximately 30 minutes. If AC power has not been restored by that time, the unit will stop functioning.

The amount of time that the AC power must be off before the unit dials-out can be programmed into the memory. This *recognition time* can be from 300 milliseconds to 127 minutes. For example, when the *recognition time* is 20 minutes, the 3300 will not dial-out unless the AC power is out for a continuous 20 minutes.

If both the power source and the battery back-up fail, the unit will not work and therefore will not dial-out with an alert. It has a non-volatile memory so the unit will not lose any of its programmed features. Also, when the power is restored, the outputs will return to their default settings, which is all outputs OFF.

THE INPUTS

The three alert inputs the 3300 offers can be remotely programmed to accept *normally open* or *normally closed dry contact* sensors. When the *normal* condition of a sensor changes, an alert is triggered.

The 3300 can be programmed not to recognize the alert condition unless it exists for a user-programmed amount of time (from 300 milliseconds to 127 minutes). After that amount of time has elapsed and if the condition still exists, the 3300 will then dial-out.

The 3300 also offers 3 status-only inputs. A change in the condition of the sensor will not cause an alert dial-out. However, the 3300 will give the status of the inputs when properly interrogated.

The 3300 has two analog inputs. They can be configured to describe the reading of an input device as a temperature (range: -20 ° F to +150 ° F), as a 4 to 20 milliamp measurement, or as a 0 to 5 Volt measurement. Configuration must be done at Phonetics, Inc. Contact Phonetics at (215) 558-2700 for details.

THE OUTPUTS

The 3300 can control 3 output devices. They can be programmed to be *normally open* or *normally closed*, with reverse acting capability (explained in Chapter 4). The output devices can be controlled in two ways:

1) You can remotely change the state of an output using a touch-tone telephone or terminal.

2) The 3300 can be programmed to change the state of an output device when the *normal* condition of the alert input (explained in detail later in this manual) changes. It also can be programmed to change the state of the output device when the high or low limit of an analog input is exceeded.

3) Output 1 can also be configured to be time-dependent. The 3300 can be programmed to activate the device attached to Output 1 during a certain time period and de-activate the device during another time period.

THE PHONE DIRECTORY

There are five dial-out telephone numbers that can be programmed into the 3300's memory. Each telephone number can be 32 digits long. The 3300 can be programmed so that each individual alert condition will prompt the unit to dial-out to specific telephone number or telephone numbers. It can also be programmed to dial-out using a pulse or touch-tone signal.

THE THERMOSTATIC SETBACK

The 3300 can be programmed with a thermostatic set-back if you are using Analog 2 to control Outputs 2 and/or 3. You can set a time period when the temperature limits can be off-set higher or lower. An example of this is having an air conditioner on Output 2. It will normally turn on at 80° F and turn off at 70° F. But, you can program the unit to off-set the limit 10° F higher from 10 PM to 6 AM to conserve electricity. Therefore, the air conditioner will not turn on unless the temperature is 90° F and it will turn off when the temperature falls to 80° F. At 6 AM, the limits will automatically reset to the original ones.

THE HISTORY REPORT

The 3300 can record all input and output states whenever an alarm occurs and/or on a user-programmed periodic basis. The history report stores up to 32 events in memory. Each recorded event includes a full time stamp (year, month, day, hours, minutes, seconds). It also contains the alarm state of all inputs and outputs.

THE RINGS UNTIL ANSWER

When you call your unit, the 3300 will answer on the ring you programmed into its memory. The number of rings can be anywhere from 1 to 31.

THE CLOCK AND CALENDAR

A clock and calendar are built into the 3300's memory. The date and time can be programmed. They will appear in data mode status reports and in the time stamp of history reports.

THE CALL-BACK INTEGRITY TEST

You can test the 3300's call-back integrity by calling the unit and giving it the call-back test command. The unit will hang up, then call a user-programmed number with a status report. Which telephone number (1, 2, 3, 4, or 5) the unit calls may be programmed into the 3300's memory.

THE PROGRAMMABLE PASSWORDS

There is an optional programmable password that is used to restrict access to the 3300's memory. It can be any combination of 4 number keys on the touch-tone telephone.

There is also a separate data mode password. It is programmed using a computer or data terminal. This password is required every time you call-in to the 3300 with a PC or terminal. The data mode password can be any combination of letters (upper and lower case are separate), numbers, and characters (such as *, ^, _, %). It can be up to 30 characters in length.

THE ACCESSORY MODULES

The 3300 can be complemented by our module rack with appropriate modules (see Appendix C). The input modules sense a high voltage load and provide the necessary dry contact for the alert or status-only inputs. The output modules will react on the logic level signal from the outputs to switch a high voltage load.

Other output modules are available. Contact Phonetics, Inc. at (215) 558-2700 for details.

ABOUT THE MODEL 3300 MANUAL

The purpose of this manual is to explain the programming and operation of the 3300. It contains step-by-step instructions, as well as examples to clarify the programming procedure.

Carefully read over this manual at least once before you start to program your 3300.

FCC REQUIREMENTS

Part 68 - The 3300 complies with Part 68 of the FCC Rules. On the back of the unit is a label that contains, among other information, the FCC Registration Number and the Ringer Equivalence Number (REN). You must, upon request, provide this information to your telephone company.

The REN is useful for determining the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone

number is called. In most areas, the sum of the RENs of all devices connected to one line should not exceed 5.0. To be certain of the number of devices that you may connect to your telephone line, you should contact your local telephone company.

Should the 3300 cause harm to the telephone network, the telephone company shall, if possible, notify you that temporary discontinuance of service may be required. However, if such action is necessary and prior written notice is not possible, the telephone company may temporarily discontinue service without notice. The telephone company may make changes in its communications facilities, equipment, and operations procedures, where such action is reasonably required in the operation of its business and is not inconsistent with the rules and regulations of the Federal Communications Commission.

The 3300 should not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

If your 3300 is programmed to dial to an emergency number (i.e. the police), you must do the following when testing:

1) Remain on the line and briefly explain to the dispatcher the reason for the call before hanging up.

2) Perform such activities in the off-peak hours, such as early morning or late evening.

If trouble is experienced, disconnect the 3300 from the telephone line to determine if the unit is causing the malfunction. If the 3300 is determined to be malfunctioning, it should be discontinued until the problem has been corrected. We suggest that you do the following:

1) Refer to Appendix J, **COMMON PROBLEMS.**

2) Carefully write down your observations of the 3300's malfunctioning.

3) Call Phonetics Customer Service at (215) 558-2700 if any instructions are not clear or if you have any questions.

Part 15 - This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential are is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CHAPTER 1
INSTALLATION

MOUNTING THE MODEL 3300

The 3300 is designed to sit on a desk- or table-top. After you have the 3300 mounted in its proper location, wire the alert inputs.

WIRING THE ALERT INPUTS

The 3300 has three digital alert inputs (see Figure C). They can be programmed to accept *normally open* or *normally closed dry contact sensors*. A *dry contact* does not depend on an electrical current. Instead, it depends on the physical connection between the leads.

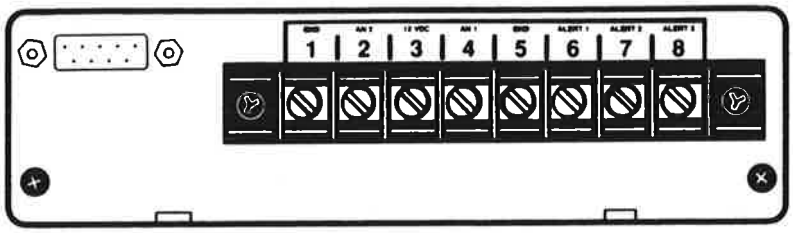


FIGURE A: INPUT TERMINALS

Whether a sensor is *open* or *closed* is stated on its package. The *normal* condition is programmed into the 3300. This procedure is explained in detail in Chapter 2.

Before you begin to connect the alert inputs, make sure that the 3300 is unplugged. Next, slide the cover off of the 3300 and check that the battery is disconnected.

CONNECTING A SENSOR TO AN ALERT TERMINAL

To connect an alert device to an input, use a standard screwdriver to loosen the input screw and the *GND* screw, both of which are on the back the 3300. The monitoring device will have two wires coming from it. The end of one of the wires gets attached to the input screw and the end of the other lead gets attached to the *GND* screw. Tighten both screws.

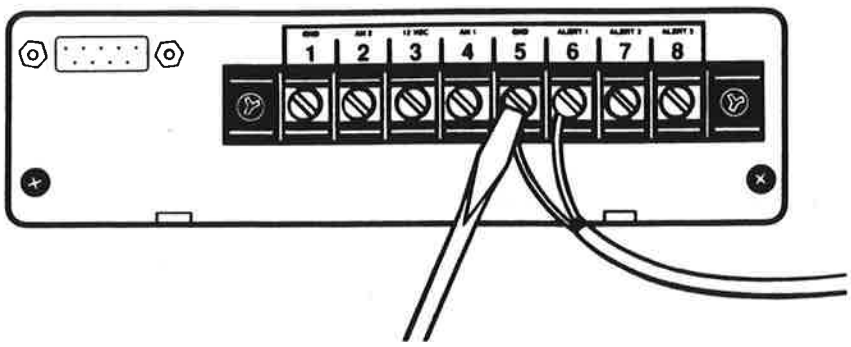


FIGURE B: CONNECTING A SENSOR TO AN INPUT

NOTE:

Any standard *normally open* or *normally closed* sensor can be connected to the 3300 with a maximum of 3000 ft. of 22 gauge wire, 1500 ft. for each lead. **The resultant circuit cannot have a loop resistance greater than 50 ohms.**

MULTIPLE SENSORS ON ONE INPUT

The 3300 is not restricted to one sensor per alert input. If you have more than one sensor connected to one input, you can do so. However, the *normal* condition for each sensor on the one input must be the same type (either *normally open* or *normally closed*).

To have more than one *normally closed* sensors on one input, they must be connected in series. Connect one lead from the first sensor to *GND*. Next, take the other lead from the first sensor and connect it to one lead from the second sensor. Continue connecting your sensors from end-to-end until you have connected all of them together. Finally, take the second lead from your last sensor and connect it to the input screw. Refer to Figure C.

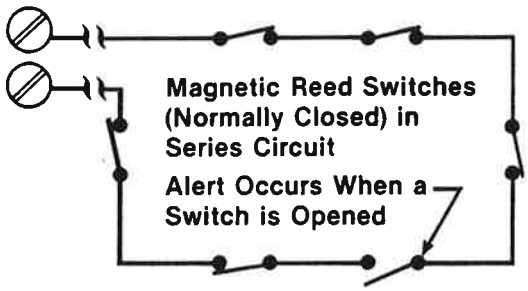


FIGURE C: CONNECTING MULTIPLE NORMALLY CLOSED SENSORS TO ONE INPUT

To connect more than one *normally open* sensor to the same input, you must connect them in parallel. To do so, take one lead from each sensor and attach it to the input screw. Then, take the second lead from each sensor and attach to the *GND* (see Figure D).

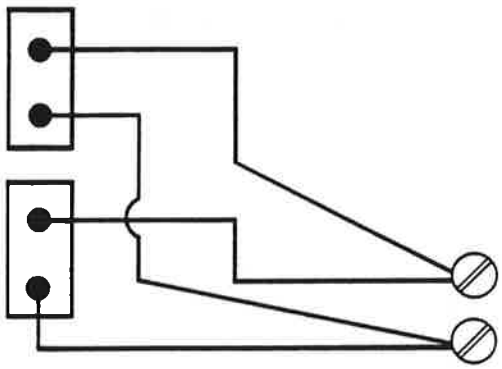


FIGURE D: ATTACHING MULTIPLE NORMALLY OPEN SENSORS TO ONE INPUT

An example of incorporating multiple sensors on one input is securing a building. If you have two doors and five windows you wish to have monitored, using multiple sensors on one input allows you to attach the doors to two separate inputs and all three windows on the third. This aspect of the 3300 is best used when distinguishing which monitored condition is causing the alert is not of the utmost importance (eg. which window caused the alarm).

WIRING THE ANALOG INPUTS

The 3300 offers two analog inputs. Please note the configuration of your unit. If it was not specified at the time of purchase, Analog input 1 is CURRENT LOOP and Analog input 2 is TEMPERATURE. If you want the configuration of the analog inputs changed, contact Phonetic for details at (215) 558-2700.

To wire a temperature sensor to an analog input, use a standard screwdriver to loosen the *common* screw and an analog input screw, both of which are located on the back of the unit. Attach one of the temperature sensor leads to the *common* and attach the other lead to the analog input screw. It does not matter which lead is attached to which screw. Tighten both screws.

To wire a 4-20 mA or a 0-5 V transmitter to an analog input, use a standard screwdriver to loosen the *common* screw and an analog input screw, both of which are located on the front of the unit. Attach the *ground* wire to the *common* and the signal wire to the analog input. Polarity is very important! Tighten both screws.

Most 4-20 mA sensors require some kind of power supply which is normally wired in series with the positive wire. If the power required for the sensor is 12V or less, the 3300 can supply the needed power. To do this, connect the positive lead from the sensor, usually the red wire, to the 12VDC terminal on the back of the 3300. The negative wire, usually black, connects to the analog input.

To check that you have wired the 4-20 mA or 0-5 V transmitter correctly, use a voltmeter to measure the voltage form the common to the input. If the voltage is positive and between 0 and 5 Volts, you have wired the sensor correctly. If the voltage is negative, you have wired the sensor incorrectly. Reverse the wires and test the voltage again.

USING THE 9-PIN CONNECTOR

On the back of the 3300 is a 9-pin connector (see Figure F). The 9-pin connector is used to connect the 3 status-only alert inputs, the 3 outputs, and the optional microphone. Use 9-pin plug, available at any electronics store.

PIN 1 +12 VDC
PIN 2 STATUS ALERT INPUT 1
PIN 3 STATUS ALERT INPUT 2
PIN 4 STATUS ALERT INPUT 3
PIN 5 +5 VOC
PIN 6 GND
PIN 7 OUTPUT 1
PIN 8 OUTPUT 2
PIN 9 OUTPUT 3

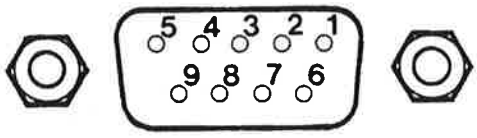


FIGURE E: 9-PIN CONNECTOR

To connect the status-only alert inputs, attach the sensor leads to the *STATUS ALERT* pin (2, 3, or 4) and *GND* (pin 6).

WIRING THE OUTPUTS

The 3300 offers three outputs. The output signals are 5 V, low current logic levels. Each output can sink a maximum current of 20 mA. **DO NOT ATTEMPT TO DRIVE HIGH CURRENT LOADS DIRECTLY FROM THE OUTPUTS!**

In order to switch high voltage and/or high current loads, you must use relays with ratings appropriate to your requirements. We recommend using optically-isolated solid-state relays.

To attach a relay to your 3300, connect 5 VDC and the output pin to your relay in accordance with the wiring diagram for the particular relay being used.

THE TELEPHONE JACK

After the 3300 is placed at its location and both the inputs and outputs are wired, plug the provided modular telephone jack into any standard modular telephone outlet (RJ11W for wall mounted phones, RJ11C for other phones).

NOTE:

If you do not have a modular telephone extension where the 3300 is located, you will have to contact your local telephone company to have one installed. There is a nominal charge for this service. If you have the four-pin jacks, adapters are readily available to convert them to the modular plugs. Contact your local telephone company or electronics parts store.

CAUTION

Never install telephone wiring during a lightning storm. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Use caution when installing or modifying telephone lines.

ACTIVATING THE MODEL 3300

To activate the 3300, plug the provided AC adapter into the nearest AC outlet (see Figure F).

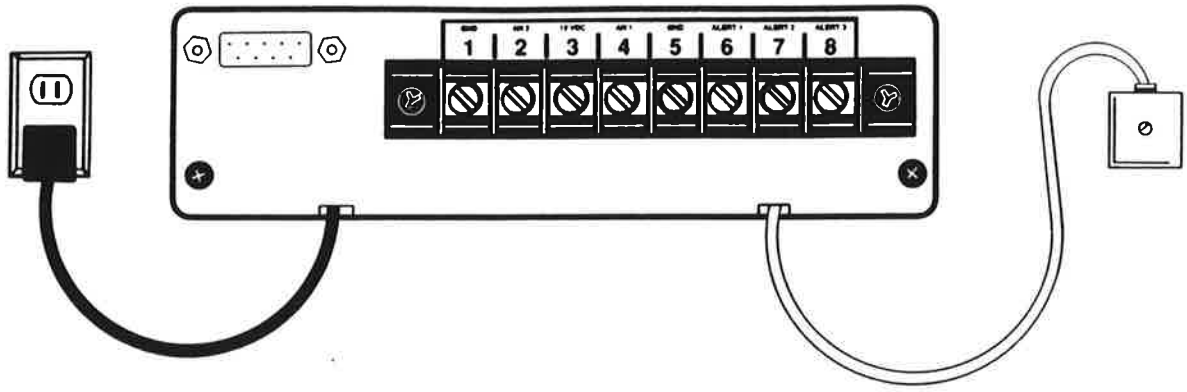


FIGURE F: PLUGGING IN THE WALL TRANSFORMER

Next, press the lighted red push button on the face of the 3300.

Finally, unscrew the front panel and lift it out of the way. Attach the battery clip to the battery and put the unit back together. This will connect the rechargeable battery to the 3300. **Do not take the battery out, as shown. The picture is for clarification only!**

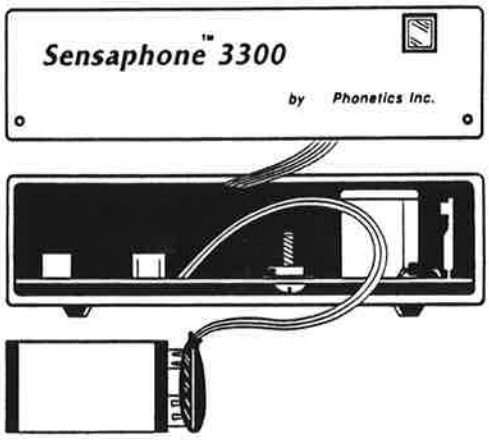


FIGURE G: ATTACHING THE BATTERY JUMPER

NOTES

SECTION 1
BASIC PROGRAMMING AND OPERATIONS

CHAPTER 2
VOICE MODE
PROGRAMMING AND INTERROGATION

Please read this chapter over at least once before you begin programming your 3300 with its information. It is recommended that at least one trial programming run is performed using the examples in each section. There is a definition of each telephone command in Appendix A and a summary of all valid touch-tone telephone sequences in Appendix B. Refer to both of those appendices for help.

The 3300 must be programmed over the telephone line. To do so, you must have a touch-tone telephone.

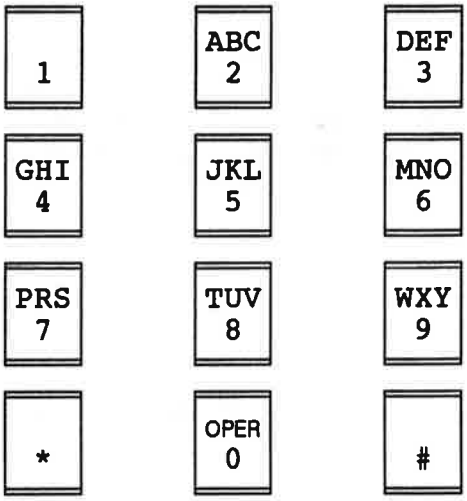


FIGURE H: TOUCH-TONE TELEPHONE PANEL

When programming the 3300 with touch-tone, you must use a very light touch. Do not hold the key down. Experiment for the best results.

In this chapter, the keys on a touch-tone telephone are mentioned frequently. In text, they will be symbolized as a single, **BOLDFACED, CAPITALIZED** letter. So the sentence "Press **S**." is read as "Press the key with PRS/7 on it."

The instructions will also include illustrations of the keys. Since each key has more than one letter on it, the single letter to which the instructions refer will be **boldface** while the other letters will be in normal type. For example, the sentence "Press **S**." will be shown as follows:

The 3300's vocal response to the pressing of the key will be printed underneath the key in *italicized* letters. An empty space underneath a key indicates that the 3300 will just beep when that key is pressed.

For example, while programming a certain parameter, you program the number 8. After the **8** key is pressed, the 3300 will say "Eight." It will be shown as follows:

Eight

There are three keys that you will use often. **PRS/7** is used to ready the 3300 for programming. When it is mentioned in instructions, it will be referred to as **S**, for "Set." **WXY/9** is used to interrogate the 3300. It will be referred to as **W**, for "What is," in instructions.

The key that is used to enter the information into the 3300's memory is the key with **#** on it. **Please note that some touch-tone telephones assign a function to the # key. If this is so on your telephone, use the * key, except when programming phone numbers and the ID number.** In programming instructions, **#** will be used as the **ENTER** key.

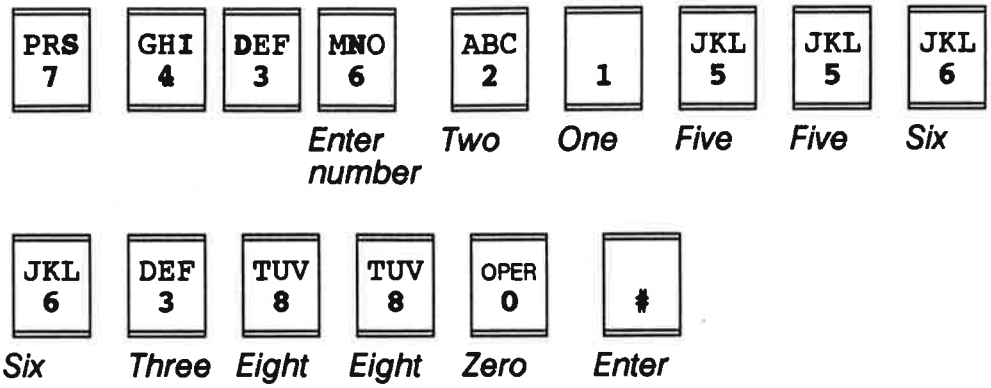
THE ID NUMBER

The unit identification number is a reference number that appears in a Status Report. It can be a maximum of thirteen digits. It is usually the telephone number of the 3300's location.

PROGRAMMING THE ID NUMBER

To set the ID number, press **S**, then the three-letter command **I D N**. The unit will say "Enter number." Sequentially press the keys corresponding to the digits of the ID number. Every time you press a key, the 3300 will say the single-digit number to which it corresponds. **You must hear the 3300 say the number you just pressed before you can press the key for the next digit.** After you have pressed the key of the last digit, press **#**. *Please note that you cannot use the * key as* **ENTER** *when programming the ID number.*

For example, to program the 3300's ID number to be 215-566-3880, press **S**, then **I D N**. The 3300 will say "Enter number." Sequentially press the digits in the ID number. **You must hear the 3300 say the number you just pressed before you can press the key for the next digit.** Finally, press **#**. The 3300 will say "Enter."



CHECKING THE ID NUMBER

To verify that the ID number is in memory, press **W**, then **I D N**.

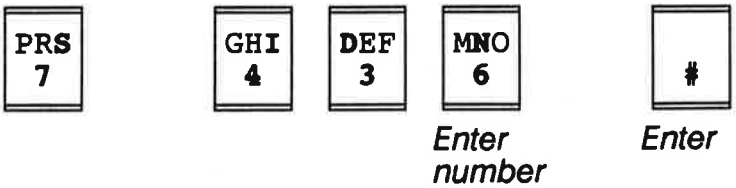
The 3300 will repeat the ID number in its memory. In reference to the example in the above section, the 3300 will say "Two, one, five, five, six, six, three, eight, eight, zero."

Another way to check the ID number is to obtain a Status Report. To do so, press **W** then **S T A**.

The 3300 will say "This is telephone number_" and repeat the ID number. It will then give a report on the conditions of the monitored functions.

DELETING THE ID NUMBER

To delete the ID number from the 3300's memory, press **S**, then **I D N**. Wait for the unit to say "Enter number," then press **#**. The unit will say "Enter."



Check that there is no ID number in memory by pressing **W**, then **I D N**. The 3300 will say "No number." If you obtain a Status Report, the 3300 will say "This is telephone number--no number."

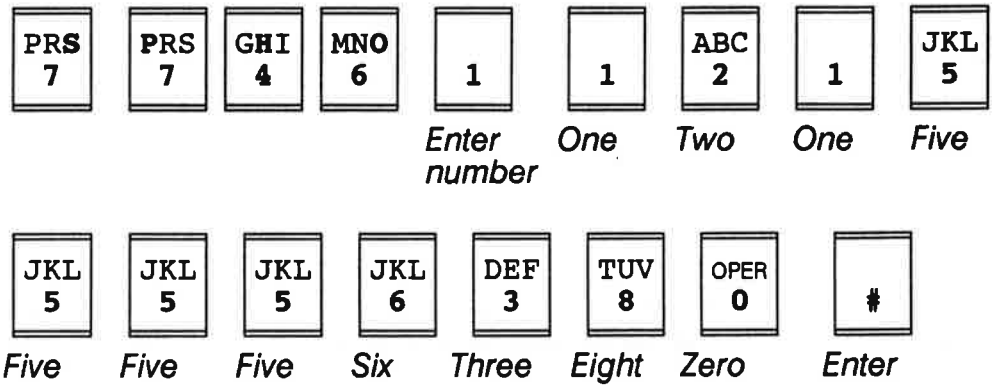
THE DIAL-OUT TELEPHONE NUMBERS

There are five telephone numbers that can be programmed into the 3300's memory. They are the dial-out telephone numbers and are referred to as Phone 1, Phone 2, Phone 3, Phone 4, and Phone 5. When an alert occurs, the 3300 will call those numbers in sequence until it is acknowledged. That is, it will call Phone 1, then call Phone 2, then call Phone 3, etc. The dial-out sequence is explained in detail in Chapter 3.

PROGRAMMING THE DIAL-OUT TELEPHONE NUMBERS

To program in a telephone number, press **S**, then **P H O**, followed by the Phone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will say "Enter number." Sequentially press the keys corresponding the digits in the telephone number. **You must hear the 3300 say the number of each key pressed before you can press the key for the next digit.** Finally, press **#**.

For example, to program Phone 1 to be 1-215-555-6380, press **S**, then **P H O**, followed by **1**. The unit will say "Enter number." Sequentially press the digits in the telephone number. **You must hear the 3300 say the number you just pressed before you can press the key for the next digit.** Finally, press **#**. The 3300 will say "Enter."



ACCESSING AN OUTSIDE TELEPHONE SYSTEM

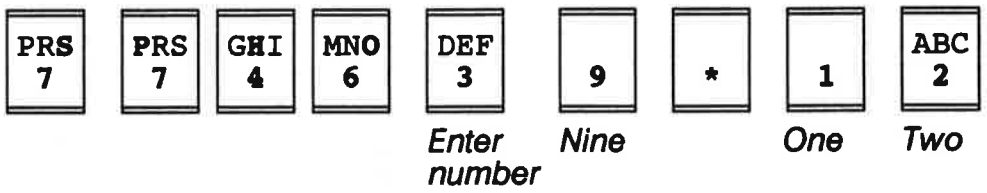
With some telephone systems, you must first dial an access number to reach an outside line, then pause before dialing a regular telephone number. The 3300 also has this capability.

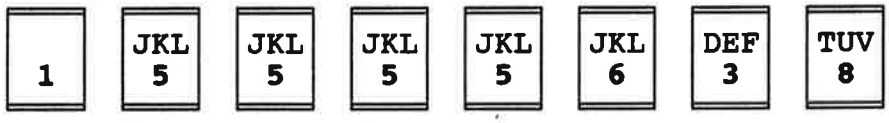
The pause must be programmed as part of the *dial-out* telephone numbers. To do so, press **S**, then **P H O**, followed by the single-digit representation of the telephone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will say "Enter number."

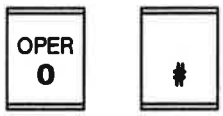
Next, press the key or keys of the number that must be dialed to access the outside line. **You must hear the 3300 say the number of each key pressed before you can press the key for the next digit.** Press *****. The unit will beep.

Finally, sequentially press the keys corresponding to the digits in the regular telephone number, then press **#**. **You must hear the 3300 say the number of each key pressed before you can press the key for the next digit.**

For example, to set Phone 3 so that the 3300 will dial 9 to access an outside line, wait for the dial tone, then dial 1-215-555-6380, press the **S**, then **P H O**, followed by **3**. The unit will say "Enter number." Press **9**. The unit will say "Nine." Press *****. You will hear the unit beep. Sequentially press the digits in the regular telephone number. **You must hear the 3300 say the number you just pressed before you can press the key for the next digit.** Finally, press **#**. The 3300 will say "Enter."







CHECKING THE TELEPHONE NUMBERS

To verify that a telephone number is in memory, press **W**, then **P H O**, followed by the single-digit number of the telephone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will repeat the telephone number in its memory.

For example, to verify that Phone 1 was programmed to be 1-215-555-6380 in the example in PROGRAMMING THE DIAL-OUT TELEPHONE NUMBERS, press the following keys:

The 3300 will say "One, two, one, five, five, five, five, six, three, eight, zero."

If you have a pause programmed into a telephone number, the 3300 will pause at the spot as it repeats the telephone number.

For example, to check Phone 3 ACCESSING AN OUTSIDE TELEPHONE SYSTEM, you would press the following keys:

The 3300 will say "Nine, (pause), one, two, one, five, five, five, five, six, three, eight, zero."

DELETING A TELEPHONE NUMBER

To delete telephone number from the 3300's memory, press **S**, then **P H O**, followed by the single digit number of the telephone number (**1**, **2**, **3**, **4**, or **5**). After the unit says "Enter number," press **#**. The unit will say "Enter."

For example, to delete Phone 1 from the 3300's memory, press **S**, **P H O**, then **1**. The unit will say "Enter number." Press **#**. The 3300 will say "Enter."

Check that there is no telephone number in memory by pressing **W**, then **P H O**, followed by the single-digit number of the telephone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will say "No number."

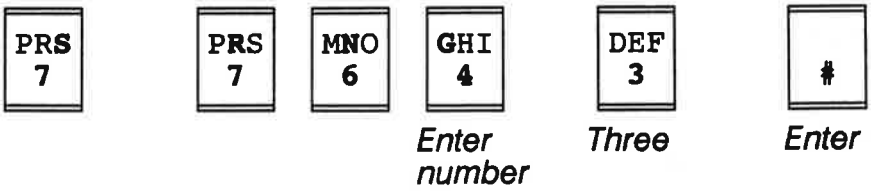
THE RINGS UNTIL ANSWER

The *Rings Until Answer* is the number of rings that must occur before the 3300 will answer the telephone in response to a call-in. The number of rings can be programmed to be from 1 to 31.

PROGRAMMING THE RINGS UNTIL ANSWER

To program this number, press **S**, then **R N G**. The 3300 will say "Enter number." Press the keys corresponding to the number of rings desired. **You must hear the 3300 say the number of the key you just pressed before you can press the key for the next digit.** Finally, press **#**. The 3300 will say "Enter."

For example. to program the 3300 to answer the telephone after three rings, press **S**, then **R N G**. The unit will say "Enter number." Press **3**, then **#**.



CHECKING THE RINGS UNTIL ANSWER

To check the numbers of rings the 3300 will wait before it answers a call-in, press **W**, then **R N G.**

The 3300 will state the number programmed into its memory. In reference to the above example, the 3300 will say "Three."

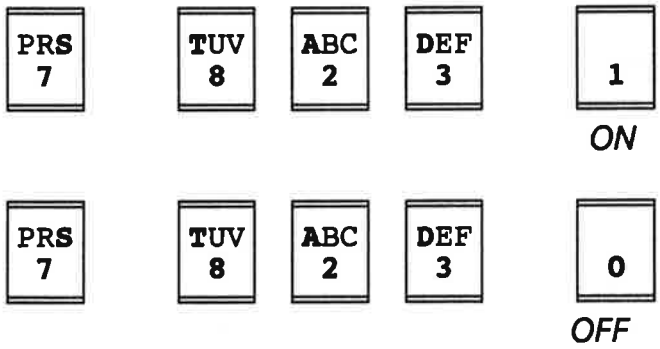
TELEPHONE ANSWERING DEVICE COMPATIBILITY

The Sensaphone Model 3300 can be used on the same telephone line with a telephone answering device (TAD) such as an answering machine or modem.

PROGRAMMING TAD

Program the number of tings until answer on the Model 3300 **higher** than that on your answering device. For example, set the Sensaphone rings for 6 and answering device rings for 4.

Set the TAD feature on. To enable the TAD, press **S, T, A, D.** Then press **1** for **ON** and **2** for **OFF.** The Sensaphone will say "ON" or "OFF" respectively.



HOW TAD WORKS

When calling into the unit, your answering device will answer the phone first, by passing the Sensaphone. When you hang up and call again within the next three minutes, the Sensaphone will answer on the first or second ring, bypassing the answering device.

THE DATE AND TIME

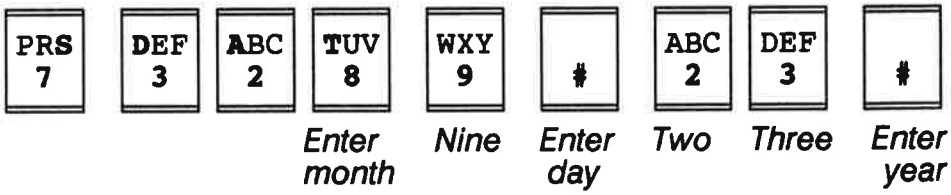
The date and time appear on the data status reports and on data alert history reports.

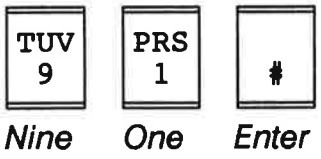
PROGRAMMING THE DATE

To program the date into the 3300's memory, press **S**, then **D A T**. The 3300 will say "Enter month." Press the key(s) corresponding the number of the month (January is 1, February is 2, March is 3, et cetera), then press **#**. The unit will say "Enter day." Press the key(s) corresponding to number of the day, then press **#**. The unit will say "Enter year." Press the keys corresponding to the last two digits of the year (for example, if the year is 1991, press the 9 and 1). Press **#**.

You must hear the 3300 beep or say the number on the key just pressed before you can press the next key.

For example, to program in the date to be September 23, 1991, press **S**, then **D A T**. The 3300 will say "Enter month." September is the ninth month of the year, so you would press **9**. Press **#**. The 3300 will say "Enter day." The day of the month is 23, so you will press **2**, then **3**. Press **#**. The 3300 will now say "Enter year." The last two digits of 1991 are 91. Press 9, then press 1. Press **#**. The 3300 will say "Enter."





Pressing **#** without entering data after a verbal prompt will leave previously programmed data unchanged. This is useful for changing only part of the date.

For example, you accidentally programmed the date to be September 24, 1991. To change the day, press **S**, then **D A T**. The 3300 will say "Enter month." Just press **#**. The 3300 will say "Enter day." You want to program the day of the month to be 23, so you will press **2**, then **3**. Press **#**. The 3300 will now say "Enter year." Press **#**. The 3300 will say "Enter."

The month and year will remain as September and 1991, respectively. When you check the date (explained in the below section), the 3300 will say "September twenty-third, nineteen ninety-one."

CHECKING THE DATE

To check the date, press **W**, then **D A T**. The 3300 will say the name of the month, the day, and the year.

For example, to verify that the date programmed in the above section is in the 3300's memory, press **W**, then **D A T**.

The 3300 will say "September twenty-third, nineteen ninety-one."

PROGRAMMING THE TIME

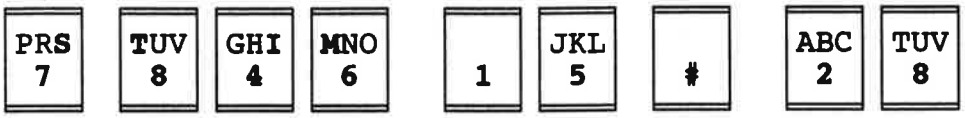
The time is programmed into the 3300 in a similar manner as the date was programmed. Press **S**, then the three-letter command **T I M**. The 3300 will say "Enter hour." Referring to the below chart, find the military-time equivalent of the hour of day.

STANDARD	MILITARY	STANDARD	MILITARY
12 AM	0	12 PM	12
1 AM	1	1 PM	13
2 AM	2	2 PM	14
3 AM	3	3 PM	15
4 AM	4	4 PM	16
5 AM	5	5 PM	17
6 AM	6	6 PM	18
7 AM	7	7 PM	19
8 AM	8	8 PM	20
9 AM	9	9 PM	21
10 AM	10	10 PM	22
11 AM	11	11 PM	23

Press the keys corresponding to the digits of the military-time equivalent, then press **#**. The 3300 will say "Enter minutes." Press the keys corresponding to the digits of the number of minutes after the hour, then press #. The 3300 will say "Enter seconds." Press the keys corresponding to the number of seconds after the minute, then press #. The 3300 will say "Enter."

You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.

For example, to program the time to be 3:28:07 PM, press the **S**, then **T I M**. The 3300 will say "Enter hour." Referring to the above chart, you see that the military equivalent of 3 PM is 15. Press **1**, then **5**. Next, press #. The 3300 will say "Enter minutes." Press **2**, then press **8**. Next, press #. The unit will say "Enter seconds." Press **7**, then press #. The unit will say "Enter."



Enter hour *One* *Five* *Enter minutes* *Two* *Eight*

Enter seconds *Seven* *Enter*

Pressing # without entering data after a verbal prompt will leave previously programmed data unchanged. This is useful for changing only part of the time.

For example, you need to change the time to 4:28:07 PM. Press the **S**, then **T I M**. The 3300 will say "Enter hour." The military equivalent of 4 PM is 16, so you would press **1**, then **6**, followed by **#**. Next, press **#**. The 3300 will say "Enter minutes." Press **#**. The unit will say "Enter seconds." Press **#** one more time. The unit will say "Enter."

The minutes and seconds will not change, but the hour will be changed to 4 PM.

CHECKING THE TIME

To check the time, press **W**, then **T I M**. The 3300 will say "The time is (current time)." The military-time hours will have been converted back to standard time. It will not state the seconds.

For example, to verify that the time programmed in the above example is in the 3300's press **W**, then **T I M**.

The 3300 will say "The time is three twenty-eight, PM."

THE ANALOG INPUTS

The Sensaphone has two analog inputs. They are known as Analog 1 and Analog 2. They can be configured to accept a temperature sensor, a 4-20 mA transmitter, or a 0-5 V transmitter. You can have your Sensaphone configured to have two current loop inputs, two temperature inputs, a current loop input and a temperature input, a voltage input and a current loop input, or two voltage inputs. **Any changes in configuration must be done at Phonetics!** Contact the factory for details. The most common configuration, which we will refer to in this section, has Analog 1 configured as current loop and Analog 2 configured as temperature.

An input configured to be CURRENT LOOP will describe the reading of an input device as a 4 to 20 milliamp measurement. 4 milliamps is equivalent to 0% and 20 milliamps corresponds to 100%. The reading will have an accuracy of ±2%. An input configured to be TEMPERATURE will describe the reading of an input device as number of degrees Fahrenheit (range: -20° F to +150° F). When the temperature drops below 0° F, the Sensaphone will say the number of degrees below zero. The reading will have an accuracy of ±2° F at room temperature. An input configured to be VOLTAGE will describe the reading of an input device as a 0 to 5 Volt measurement. 0 Volts is equivalent to 0% and 5 Volts corresponds to 100%. The reading will have an accuracy of ±2%.

The configuration of the analog inputs will be reflected in the Sensaphone's vocal response to the commands that affect the analog inputs. For example, if you have your analog inputs configured to be two current loop inputs, the Sensaphone will say "Current loop one" and "Current loop two." If the inputs are configured to be current loop and voltage, the Sensaphone will say "Current loop one" and "Volts two."

Both analog inputs can be adjusted for exact measurements. See page 55.

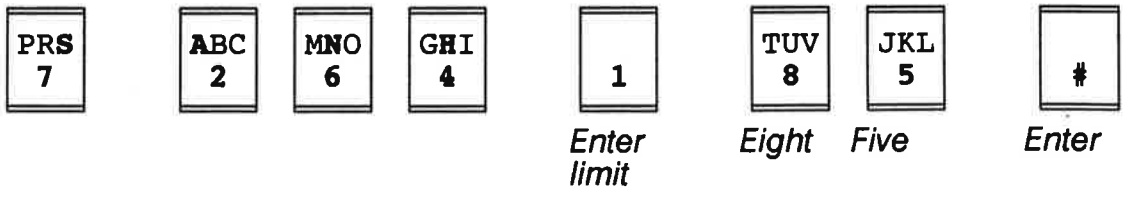
PROGRAMMING THE HIGH ANALOG LIMITS

The high analog limit is the high reading at an analog input that causes the Sensaphone to dial-out with an alert message.

When an analog input is configured to be CURRENT LOOP, the high analog limit is the high percentage of the 4 to 20 milliamp input that will cause a dial-out. That is, if the high analog limit is to be 50% of its maximum milliamp input, you would enter the number 50. When an analog input is configured to be TEMPERATURE, the high analog input limit is the high temperature that will cause an alert dial-out. When an analog input is configured to be VOLTAGE, the high analog limit is the high percentage of the 0 to 5 V input that will cause a dial-out. That is, if the high analog limit is 75% of its maximum voltage input, the number 75 would be entered.

To program a high analog limit, press **S**, then the three-letter command **ANH**. Next, press the analog input number (**1** or **2**). The Sensaphone will say "Enter limit." Press the keys corresponding to the digits of the high analog input. Finally, press **#**. The Sensaphone will then say "Enter."

Suppose you would like to know if the sensor connected to Analog 1 reads above 85%. This would be the high analog limit. To program it, press **S**, then **ANH**, followed by **1**. The Sensaphone will say "Enter limit." Press **8**. The unit will say "Eight." Press **5**. The unit will say "Five." Press **#**. The Sensaphone will say "Enter."



To input negative temperature setpoints, precede your number by *. For example, to set the Analog input 2's high limit to be -2° F, you would press **S, ANH, 2, * 2,** then **#.**

If you do not program a high analog limit, it will be 100% for CURRENT LOOP and VOLTAGE inputs and 150° F for TEMPERATURE inputs.

CHECKING THE HIGH ANALOG INPUT

To check a high analog input, press **W**, then **ANH**. Next, press the analog input number (**1** or **2**). The Sensaphone will say "(number) percent" if the analog type is CURRENT LOOP or VOLTAGE. It will say "(number) degrees" if the analog type is TEMPERATURE.

To check the high analog limit programmed in the example above, press **W, ANH,** then **1**. The Sensaphone will say "Eighty-five percent."

Eighty-five percent

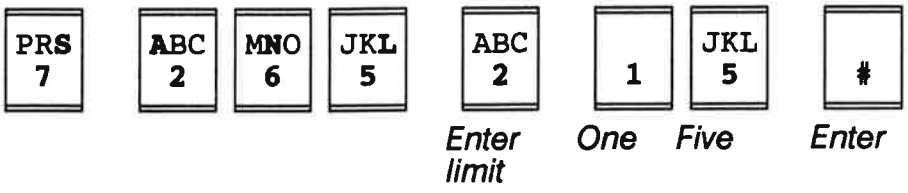
PROGRAMMING THE LOW ANALOG LIMITS

The low analog limit is the low reading at an analog input that causes the Sensaphone to dial-out with an alert message.

When an analog input is configured to be CURRENT LOOP, the low analog limit is the low percentage of the 4 to 20 milliamp input that will cause a dial-out. That is, if the low analog limit is to be 10% of its maximum milliamp input, you would enter the number 10. When an analog input is configured to be TEMPERATURE, the low analog input limit is the low temperature that will cause an alert dial-out. When an analog input is configured to be VOLTAGE, the low analog limit is the low percentage of the 0 to 5 V input that will cause a dial-out. That is, if the low analog limit is 25% of its maximum voltage input, the number 25 would be entered.

To program a low analog limit, press **S**, then the three-letter command **ANL**. Next, press the analog input number (**1** or **2**). The Sensaphone will say "Enter limit." Press the keys corresponding to the digits of the low analog input. Finally, press **#**. The Sensaphone will then say "Enter."

Suppose you would like to know if the sensor connected to Analog 2 reads below 15°. This would be the low analog limit. To program it, press **S**, then **ANL**, followed by **2**. The Sensaphone will say "Enter limit." Press **1**. The unit will say "One." Press **5**. The unit will say "Five." Press **#**. The Sensaphone will say "Enter."

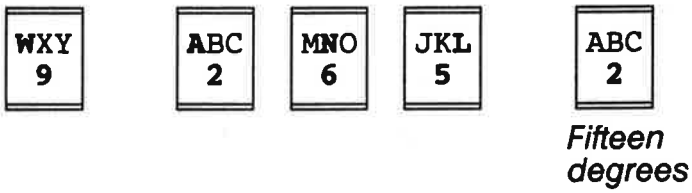


To input negative temperature setpoints, precede your number by *****. For example, to set the Analog input 2's low limit to be -15° F, you would press **S, ANL, 2, * 1 5,** then **#.**

If you do not program a low analog limit, it will be 0% for CURRENT LOOP and VOLTAGE inputs and -20° F for TEMPERATURE inputs.

CHECKING THE LOW ANALOG INPUT

To check a low analog input, press **S**, then **ANL**. Next, press the analog input number (**1** or **2**). The Sensaphone will say "(number) percent" if the analog type is CURRENT LOOP or VOLTAGE. It will say "(number) degrees" if the analog type is TEMPERATURE.
To check the low analog limit programmed in the above example, press **S, ANL,** then **2**. The Sensaphone will say "Fifteen degrees."



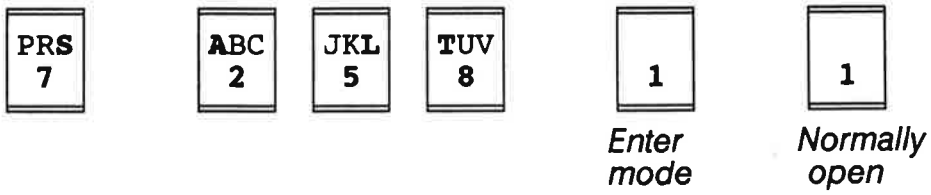
THE ALERT INPUT NORMALITY

The 3300 has three alert inputs known as Alert 1, Alert 2, and Alert 3. The Alert inputs can be programmed to accept a *normally open* or *normally closed dry contact sensor*. If you do not program a *normality* for either or both, they will be considered to be *normally open*.

PROGRAMMING THE ALERT NORMALITY

To program the alert input normality, press **S**, then **A L T**. Next, press the key of the alert input number (**1, 2,** or **3**). The 3300 will say "Enter mode." Press **0** to set the input to be *normally closed*. The 3300 will say "Normally closed." Press **1** to set the input to be *normally open*. The 3300 will say "Normally open."

For example, to set Alert 1 to be *normally open*, press **S, A L T,** then **1**. The 3300 will say "Enter mode." To set the alert input to be *normally open*, press **1**. The unit will now say "Normally open."



CHECKING THE ALERT NORMALITY

To check the alert input normality, press **W**, then **A L T**. Next, press the key of the alert input number (**1** , **2** or **3**). The 3300 will say "Normally closed." or "Normally open."

For example, to verify that Alert 1 in the above example is *normally open*, press **W**, **A L T**, then **1**. The unit will now say "Normally open."

Normally open

THE STATUS-ONLY INPUTS

The 3300 also offers 3 status-only inputs. A change in the status will not cause an alert dial-out. However, the 3300 will give the status of the inputs when properly interrogated.

To check the status of these 3 status-only inputs, press **W**, then **I S T**. The 3300 will say "One (open or closed). Two (open or closed). Three (open or closed)."

For example, Status-only input 1 is normally open, Status-only input 2 is normally closed, and Status-only input 3 is normally closed. When you press **W**, then **I S T**, the 3300 will say "One, open. Two, closed. Three, closed."

THE OUTPUTS

The 3300 can control 3 output devices. You can manually adjust the state of the outputs using your touch-tone telephone or a remote PC/data terminal.

MANUALLY CHANGING OUTPUT STATE

To manually change the output state, press **S**, then **O U T**. Next, press the number of the output (**1**, **2**, or **3**). To activate the output device, press **1**. The unit will say "On." To de-activate the output device, press **0**. The 3300 will say "Off."

For example, to activate the device attached to Output 1, press **S**, **O U T**, **1**, then **1**. The 3300 will say "On."

On

CHECKING OUTPUT STATE

To check the output state, press **W, O U T**, followed by the output number (**1, 2,** or **3**). The 3300 will say "On" if the output device is activated and "Off" if the output device is de-activated.

For example, to check that Output 1 in the above example is on, sequentially press **W, O U T**, then 1. The 3300 will say "On."

On

CHECKING CONTROL MODULE RELAY STATUS

The CM101 control module (see Appendix C) allows you to override the programmed state of the outputs with the switches on its front. If you use one of the switches to change the state of an output, the actual state of the output will not always be the state programmed in MANUALLY CHANGING OUTPUT STATUS. **This command is not applicable if you are using the OPTO-22 control modules.**

To find out the actual state of an output, press **W**, then **R S T**. The 3300 will say "One, (on or off). Two, (on or off). Three, (on or off)."

For example, Output 3 was programmed to be on in MANUALLY CHANGING OUTPUT STATUS. However, you use the manual override switch on the CM101 control module to turn off Output 3 and turn on Outputs 1 and 2. When you press **W, O U T**, then **3**, the 3300 will say "On" because it is giving you the programmed state of the output. To find out the actual state of the output, you must press **W**, then **R S T**.

The 3300 will say "Output one, on. Output two, on. Output three, off."

THE VOICE PASSWORD

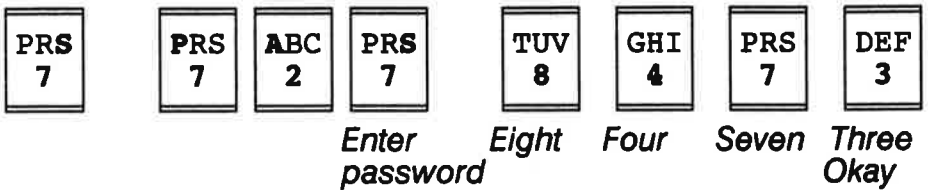
The voice password is an optional feature which is designed to protect your 3300 from misuse by unqualified personnel. It is any combination of four single-numbers (the numbers 0 through 9). It is used when the 3300 is called with a touch-tone telephone. This is completely independent of the data password.

PROGRAMMING THE VOICE PASSWORD

The voice password can be any combination of four single-digit numbers. It can be programmed over a telephone line with a touch-tone telephone. To program it, press **S**, then **P A S**. The 3300 will say "Enter password." Sequentially press the

keys of the four digits of the password. **You must hear the 3300 say the number on the key just pressed before you can press the next key.** After the 3300 repeats the fourth digit, it will pause, then say "Okay."

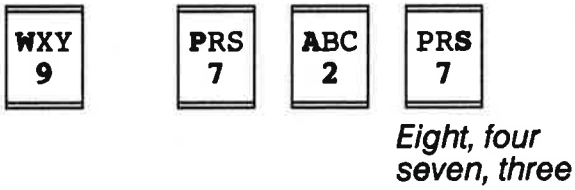
For example, to program the 3300 to have a 3300 a password of 8473, press **S**, then **P A S**. The 3300 will say "Enter password." Next, press **8**. The 3300 will say "Eight." Then, press **4**. The 3300 will say "Four." Press **7**. The 3300 will say "Seven." Finally, press **3**. The 3300 will say "Three," pause for a moment, then say "Okay."



CHECKING THE VOICE PASSWORD

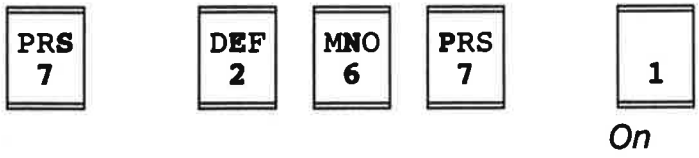
To verify that you have programmed in the correct password, press **W**, then **P A S**. The 3300 will state the current four-digit password.

For example, to check that the password 8473 (from the example in the above section) is in the 3300's memory, press **S**, then **P A S**. The 3300 will say "Eight, four, seven, three."



ENABLING THE VOICE PASSWORD

Once a voice password has been entered into the 3300's memory, it must be enabled to be used. To do so, press **S**, then **E N P**, followed by **1**. The 3300 will say "On."



Now when you call into the unit, it will say "Hello. Enter password." Sequentially press the digits of the password. The 3300 will say "Okay." You are now able to program and interrogate the 3300.

If you do not press the correct password, the 3300 will say "Invalid. Have a nice day." and disconnect from the telephone line. You will not be able to gain access the 3300 unless you enter the correct password.

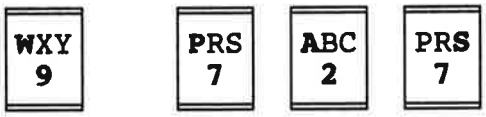
To disable the password function, press **S**, then **E N P**, followed by **0**. The 3300 will say "Off."

Off

The 3300 will have a password in its memory, but will not ask you to enter the password when you call-in. You get immediate access to the 3300's memory.

CHECKING PASSWORD STATUS

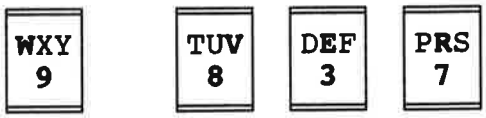
To check if the password function is enabled, press **W**, then **E N P**. The 3300 will say "On." or "Off."



On/Off

THE VERSION NUMBER

You can check the version number of your 3300 by pressing **W**, then **VER**. The 3300 will state three numbers, which is your version number. For example, to check your version number, press **W**, then **VER**. The 3300 says "Four, two, two." That is your version number, 4.22



The version number is important for trouble-shooting if you call Phonetics for technical support.

CHAPTER 3
GENERAL OPERATIONS

OBTAINING A STATUS REPORT

A status report gives the conditions of all monitored conditions. You obtain one by pressing **W**, then the three letter command **S T A**.

The 3300 will say the following:

STATEMENT	COMMENT
This is telephone number	(ID number)
Current loop 1 (number) percent	OK HIGH LOW
Temperature 2 (number) degrees	OK HIGH LOW
Alert condition 1	OK EXISTS
Alert condition 2	OK EXISTS
Alert condition 3	OK EXISTS
The electricity is	ON OFF

ALARM CONDITIONS

There are four instances when an alarm condition occurs. When any of these situations occur, the 3300 will dial-out with an alarm.

1) When the normal status of an alert condition changes for 300 milliseconds. The 3300 will say "Alert condition (1, 2, or 3) exists." If multiple sensors are on one terminal, you will not be able to distinguish which sensor gave the alert.
2) When the temperature/current of an analog input exceeds the programmed high limit. The 3300 will say "Temperature 2 high" or "Current loop 1 high."
3) When the temperature/current of an analog input falls below the programmed low limit. The 3300 will say "Temperature 2 low" or "Current loop 1 low."
4) When the AC power fails for 5 minutes. The 3300 will say "The electricity is off."

3300 BASIC ALARM RESPONSE

(NOTE: The following description assumes none of the parameters explained in Section 2 have been programmed.)

When an alarm occurs, the unit will dial-out to Phone 1 with the alarm message. If there is no acknowledgement from Phone 1, the 3300 will dial-out to Phone 2. If there is no acknowledgement from Phone 2, the unit will dial-out to Phone 3. If there is no acknowledgement from Phone 3, the 3300 will dial-out to Phone 4. If there is no acknowledgement from Phone 4, the unit will dial Phone 5. If there is no acknowledgement from Phone 5, the unit will wait 8 minutes, then begin the entire dial-out sequence again. The 3300 will perform the dial-out sequence every 8 minutes for one hour, or until the alarm is acknowledged. If the first hour passes and the alert is not acknowledged, the 3300 will only perform the dial-out sequence once an hour.

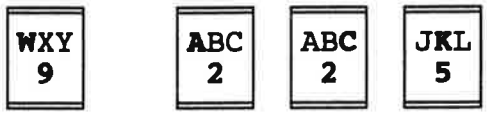
When the 3300's dial-out is answered, the unit will say "This is telephone number (ID number)." It will state the alarm message, then say "Again." It will repeat this sequence two more times. The unit will wait 30 seconds for an on-line acknowledgement. If the voice password is enabled, the 3300 will say "Enter password" after the third repetition. If the password is not entered within 30 seconds, the unit will immediately disconnect. If the password is entered, you have an additional 30 seconds to give a command.

ACKNOWLEDGING AN ALARM

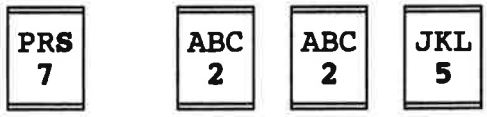
When the 3300 dials-out in voice mode, it will state the message, then wait 30 seconds for an on-line acknowledgement. If the voice password is enabled, the 3300 will say "Enter password" after the message. If the password is not entered within 30 seconds, the unit will immediately disconnect. If the password is entered, you have an additional 30 seconds to give a command. If there is no acknowledgement, the unit will then disconnect from the telephone line and dial-

out to the next Phone number. You can also call-in to the unit at any time to acknowledge an alarm condition.

To check what alarm conditions exist, press **W**, then **ACK**. The 3300 will state any existing unacknowledged alerts.



To acknowledge an alarm in data mode, just type **ACK** after the *3300>* prompt. To acknowledge an alarm with a touch-tone telephone, press **S**, then **ACK**. The 3300 will say "Okay."



Okay

When an alarm is acknowledged, the 3300 will go back to its normal monitoring state. It will not dial-out for that particular alarm condition again, unless the condition goes away, then reappears.

CANCELING AN ALARM

The lighted red button on the face of the 3300 is used to cancel the automatic dial-out caused by an alert condition. If you press the button while the 3300 is on-line, it will disconnect.

For example, Alert 1 is monitoring a magnetic reed switch that is attached to a warehouse door. When you open the warehouse door, you trigger the magnetic reed switch, thereby causing an alarm. To halt the automatic alert dial-out, you just walk over to the 3300 and press the lighted push button once.

DISCONNECTING FROM THE 3300

To disconnect from the 3300, just press S EXI. The 3300 will say "Have a good day" and hang-up. Otherwise, it will time-out after 30 consecutive seconds have elapsed from your last programming or interrogation.

RESET EEPROM

The 3300 has non-volatile memory which means that the unit retains all programmed commands in memory even without power. The reset feature allows

you to completely clear out all programmed parameters and reset the 3300 the 3300 back to factory default.

This command is useful if you are moving the unit to another location. The reset command clears all parameters so that you do not have to search through all the parameters to find out how they were set. You can then program the 3300 as if it were new.

Also, this command is helpful if you have made many programming errors and want to start from scratch.

To rest the 3300, press **S RES**. After a few seconds, the 3300 will say "Clear."

NOTES

SECTION 2
ADVANCED PROGRAMMING AND OPERATIONS

CHAPTER 4
ADVANCED VOICE MODE PROGRAMMING AND INTERROGATION

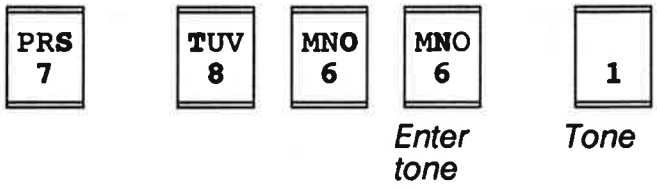
Section 2 explains and illustrates more programming commands and options. These commands give the 3300 more versatility and allow you to program the unit especially for your particular needs. These commands are not necessary for the basic functioning of the unit. Your unit will still function properly if you choose to only use the commands in Section 1, **BASIC PROGRAMMING AND OPERATIONS.**

The 3300 can be programmed with the dialing method it will use when it dials-out. It can use pulse dialing or touch-tone.

PROGRAMMING DIAL-OUT METHOD

To program this feature, press **S**, then the three-letter command **T O N**. The 3300 will say "Enter tone." If you want the 3300 to dial-out using pulse dialing, press 0. The unit will say "Pulse." If you want the 3300 to dial-out using touch-tone dialing, press 1. The 3300 will say "Tone."

For example, to program the 3300 to dial-out with touch-tone, press **S**, then **T O N**. The 3300 will say "Enter tone." Press 1 for touch-tone. The unit will say "Tone."



CHECKING DIAL-OUT METHOD

To check the dial-out method, press **W**, then the three-letter command **T O N**. The 3300 will say either "Tone" or "Pulse."

For example, to check the dial-out programmed in the above example, press **W**, then **T O N**. The 3300 will say "Tone."

Tone

THE DIAL-OUT SELECTION

The 3300 can be programmed to call only specified Phone numbers when a certain alarm occurs. This allows you to have a certain alarm condition notify a person who is capable of responding to that particular alarm. This also enables you to program the 3300 not to dial-out at all if the alarm condition triggers an automatic output adjustment (as explained on page 67).

PROGRAMMING DIAL-OUT SELECTION

To program the dial-out selection, press **S**, then **S E L**, followed by the Phone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will say "Alert condition one." Press **1** to have Alert condition 1 cause a dial-out to Phone 1; otherwise, press **0**. The 3300 will say "Yes" if you pressed **1** or "No" if you press **0**. It will then say "Alert condition two." Press **1** or **0**. The 3300 will say "Yes" or "No" then "Alert condition three." Press **1** or **0**.

The 3300 will say "Yes" or "No" then "Current loop one, low." Press **1** for yes and **0** for no. The 3300 will say "Yes" or "No" then "Current loop one, high." Press **1** or **0**. The 3300 will say "Yes" or "No" then "Temperature two, low." Press **1** or **0**. The 3300 will say "Yes" or "No" then "Temperature two, high." Press **1** or **0**.

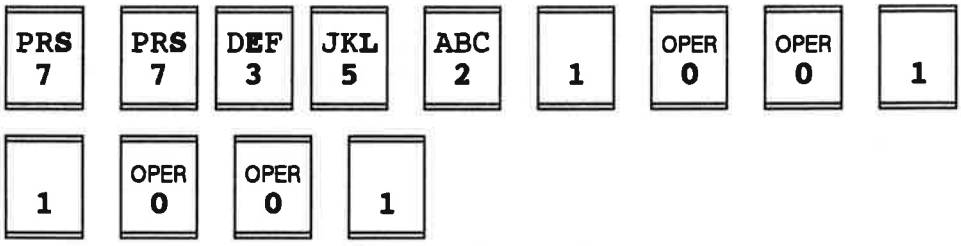
The 3300 will say "Yes" or "No" then "Power out." Press **1** or **0**. The 3300 will say "Yes" or "No".

For example, you want Phone 2 to be called when Alert condition 1 exists, when Analog 1 is high or low, or when the power fails.

Press **S**, **S E L**, then **2**. The 3300 will say "Alert condition one." Press **1**. The unit will say "Yes. Alert condition two." Press **0**. The unit will say "No. Alert condition three." Press **0**. The unit will say "No. Current loop 1, low." Press **1**. The 3300 will say "Yes. Current loop 1, high." Press **1**. The unit will say "Yes. Temperature two, low." Press **0**. The unit will say "No. Temperature two, high." Press **0**. The 3300 will say "No. Power out." Press **1**. The unit will say "Yes."

ALARM	CAUSE DIAL-OUT
Alert condition 1	yes (1)
Alert condition 2	no (0)
Alert condition 3	no (0)
Current loop 1, low	yes (1)
Current loop 1, high	yes (1)
Temperature 2, low	no (0)
Temperature 2, high	no (0)
Power out	yes (1)

(NOTE: In the below example, the 3300's vocal response will not be shown. Instead, refer to the above chart.)



CHECKING THE DIAL-OUT SELECTION

To check the dial-out telephone number selection, press **W**, then **S E L**, followed by the Phone number (**1**, **2**, **3**, **4**, or **5**). The 3300 will state each alert condition and say "Yes" if that condition will cause a dial-out to that number or "No" if it does not.

For example, to check the dial-out selection programmed in the above example, press **W**, **S E L**, then **2**.

The 3300 will say:

STATEMENT	COMMENT
Alert condition 1	yes
Alert condition 2	no
Alert condition 3	no
Current loop 1, low	yes
Current loop 1, high	yes
Temperature 2, low	no
Temperature 2, high	no
Power out	yes

THE VOICE/DATA MESSAGE

The 3300 can be programmed to dial-out to a specified Phone number and give either a voice message or a data message. The voice message consists of the 3300 stating a warning message in English. The data message would be a carrier signal for a computer.

PROGRAMMING THE VOICE/DATA MESSAGE

To program the voice/data message option, press **S**, then **V O I**, followed by the Phone number (**1**, **2**, **3**, **4**, or **5**). If you want a voice message, press **1**. If you want a data message, press **0**. The 3300 will say "On" or "Off," respectively.

For example, to program the 3300 to give a voice message when it dials-out to Phone 1, you would press **S**, **V O I**, **1**, then **1**. The 3300 will say "On."

On

CHECKING THE VOICE/DATA MESSAGE

To check the voice/data message option, press **W**, then **V O I**, followed by the Phone number (**1**, **2**, **3**, **4**, or **5**). If you programmed a voice message, the 3300 will say "On." If you programmed a data message, the 3300 will say "Off."

For example, to check the message programmed in the above example, you would press **W, V O I,** then **1**. The 3300 will say "On."

On

THE ALARM RECOGNITION TIMES

The recognition time is the amount of continuous time that an Alert or power out condition must exist before the 3300 dials-out with an alert message. The amount of recognition time can be 300 milliseconds, from 1 to 127 seconds, or from 1 to 127 minutes. Power out, Alert 1, Alert 2, and Alert 3 can be programmed with recognition times that are independent of each other.

NOTE:

When you program a recognition time in seconds, it has an accuracy of ±1 second. When you program a recognition time in minutes, it has an accuracy of 1 minute. Therefore, if a 1 minute recognition time is desired, programming the recognition time to be 60 seconds is more accurate.

When you program the recognition time to be 300 milliseconds, it has an accuracy of ±10 milliseconds.

PROGRAMMING THE RECOGNITION TIME

To program the recognition time, press **S**, then **R E C**. To program the recognition time for Alert 1, press **1**. To program the recognition time for Alert 2, press **2**. To program the recognition time for Alert 3, press **3**. To program the recognition time for a power failure, press **4**.

OPTIONS	INPUT NUMBER
ALERT 1	1
ALERT 2	2
ALERT 3	3
POWER	4

The 3300 will say "Enter mode." To have the recognition time in seconds or milliseconds, press **0**. To have the recognition time in minutes, press **1**.

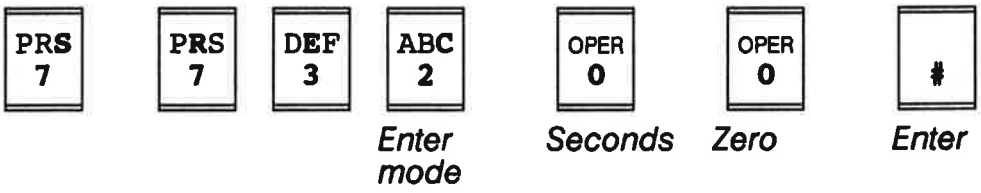
OPTIONS	INPUT NUMBER
MILLISECONDS	0
SECONDS	0
MINUTES	1

The 3300 will now say "Enter time." Press the keys corresponding to the digits of amount of time. By pressing **0** when the mode is seconds, the recognition time will be 300 milliseconds.

You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.

After you have pressed the last digit in the recognition time, wait for the 3300 to repeat the number. Then, press **#**. The 3300 will say "Enter."

For example, you want the recognition time for Alert 1 to be 300 milliseconds. Press **S**, then **R E C**. The 3300 will say "Enter mode." Since the recognition time will be 300 milliseconds, press **0**. The 3300 will say "Seconds." Press **0** again. The 3300 will say "Zero". Press **#**. The 3300 will say "Enter."



Please note that the 3300 said "Zero." Regardless, the recognition time was programmed to be 300 milliseconds.

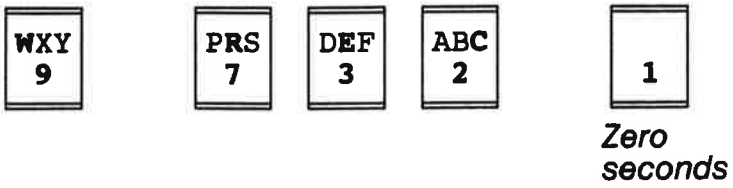
CHECKING THE RECOGNITION TIME

To check the recognition time, press **W**, then **R E C**. Next, press the input number of the parameter you are checking.

OPTIONS	INPUT NUMBER
ALERT 1	1
ALERT 2	2
ALERT 3	3
POWER	4

The 3300 will state the recognition time in seconds or in minutes. If the programmed recognition time was 300 milliseconds, the 3300 will say "Zero seconds."

For example, to verify that the recognition time in the above example is 300 milliseconds, press **S**, then **R E C**, followed by **1**. The 3300 will say "Zero seconds."



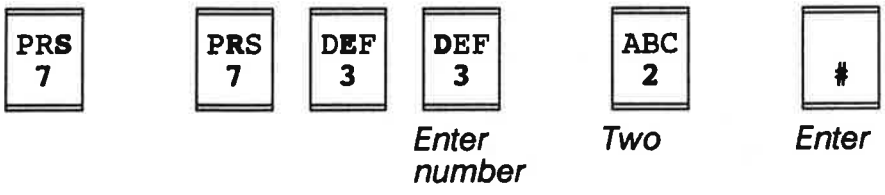
REDIAL TIME

When an alert exists, the 3300 will start its dial-out routine. It will dial every telephone number it is programmed to dial to give its alert message. If it cannot connect with a certain telephone number, the 3300 will move on to the next one. After the unit has dialed every telephone number it was programmed to dial, it will wait a user-programmed amount of time (in minutes). Then it will redial any selected telephone numbers. The amount of time the 3300 will wait before redialing an unavailable number is the *redial time*.

PROGRAMMING THE REDIAL TIME

To program in the redial time, press **S**, then **R E D**. The 3300 will say "Enter number." Press the key(s) corresponding to the amount of redial time. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Then press **#**. The 3300 will say "Enter."

For example, to program the redial time to be two minutes, press **S**, then **R E D**. The 3300 will say "Enter number." Press **2**. The 3300 will say "Two." Press **#**. The unit will say "Enter."

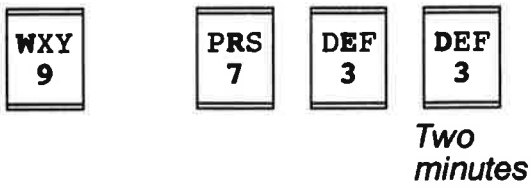


It is recommended that you set the redial time to be at least 8 minutes to comply with FCC regulations.

CHECKING THE REDIAL TIME

To check the redial time, press **W**, then **R E D**. The 3300 will say "(number) minutes."

For example, to verify that the redial time programmed in the above section is in the 3300's memory, press **W**, then **R E D**. The 3300 will say "Two minutes."



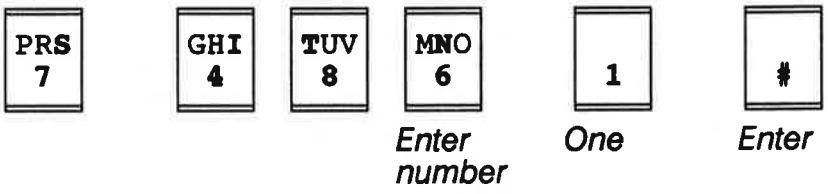
THE CALL-BACK INTEGRITY TEST

The call-back integrity test is used to verify the 3300's ability to dial-out during an alert. The unit will dial-out to Phone 1, Phone 2 or Phone 3, state its ID number, then list any unacknowledged alarms.

PROGRAMMING THE TEST TELEPHONE NUMBER

The integrity test telephone number is one of the three dial-out telephone numbers. Press **S**, then the three letter command **I T N**. The 3300 will say "Enter number." Press the single-digit representation of the selected dial-out telephone number (1, 2, 3, 4, or 5), then press **#**. **You must hear the 3300 say the number of the key you just pressed before you can press #.**

For example, to program the integrity test number to be Phone 1, press **S**, then **I T N**. The unit will say "Enter number." Press **1**. The unit will say "One." Press **#**. The 3300 will say "Enter."



CHECKING THE TEST TELEPHONE NUMBER

To verify that the integrity test telephone number is in memory, press **W**, then **I T N**. The 3300 will repeat the single-digit number representing the Phone number.

For example, to verify that the integrity test telephone number was programmed to be Phone 1 in the example in the above section, press **W**, then **I T N.** The 3300 will say "One."

STARTING THE CALL-BACK INTEGRITY TEST

To start the integrity test, press **S**, then the three letter command **T E S**.

If the 3300 has no integrity test telephone number in its memory, the 3300 will say "No number."

THE CARRIER WAIT TIME

The carrier wait time is the length of time the 3300 will wait for a connection to another data device (such as a data terminal or PC) when it receives a call-in. It can be from 0 to 255 seconds. If you are operating solely in voice mode, set the carrier wait time to 0.

PROGRAMMING THE CARRIER WAIT TIME

To program the carrier wait time, press **S**, then the three-letter command **C A R**. The 3300 will say "Enter time." Press the keys corresponding to the digits of the length of time. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Press **#**.

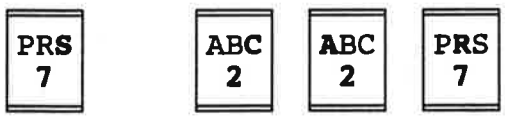
For example, to program the carrier wait time to be 15 seconds, press **S**, then **C A R**. The 3300 will say "Enter time." Press **1**. The 3300 will say "One." Press **5**. The unit will say "Five." Press **#**. The unit will say "Enter."

Enter time *One* *Five* *Enter*

CHECKING THE CARRIER WAIT TIME

To check the length of carrier wait time, press **W**, then **C A R**. The 3300 will say "(number) seconds."

To verify that the carrier wait time programmed in the above section is 15 seconds, press **W**, then **C A R**. The 3300 will say "Fifteen seconds."



Fifteen seconds

THE HISTORY REPORT

One feature of the **data** mode is the Alert History feature. The 3300 is capable of logging alert data by event or by time. The unit is capable of storing 32 entries.

This can be expanded to 224 entries. The alert history report is explained in more detail on page 86.

You can find out the number of data messages while in voice mode. To do so, press **W**, then **H I S**. The 3300 will state the number of messages in its memory.

For example, your 3300 has 21 data messages in its memory. You want to find out how many messages there are, so you press **W**, then **H I S**. The 3300 will say "Twenty one."

THE ANALOG INPUTS

The Sensaphone Model 3300 has two analog inputs. If an input is configured to read as a TEMPERATURE, the Sensaphone will state the input status as a number of degrees Fahrenheit. When the temperature drops below 0° F, the unit will say the temperature is the number of degrees below zero. The reading will have an accuracy of ±2° F. If an input is configured to be CURRENT LOOP, the Sensaphone will state the input reading as a percentage of 4 to 20 milliamps. Four milliamps is equivalent to 0% and 20 milliamps corresponds to 100%. If an input is configured to be VOLTAGE, the Sensaphone will state the input reading as a percentage of 0 to 5 Volts. Zero Volts is equivalent to 0% and 5 Volts corresponds to 100%. CURRENT LOOP and VOLTAGE readings will have an accuracy of ±2%.

If you have your Sensaphone configured to have two current loop inputs, two voltage inputs, a current loop input and a voltage input, or two temperature inputs, the change will be reflected in the Sensaphone's vocal response to the commands that affect the analog inputs. For example, if you have your analog inputs configured to be two current loop inputs, the Sensaphone will say "Current loop one" and Current loop two."

DAMPING FACTOR

A command provides damping on the analog inputs. This allows you to smooth out your analog input readings. This is actually an adjustment of the maximum rate of change of the analog readings. The damping factor can be any number between 1 and 255. If the number is set to 1, then the analog input can adjust one percent every 60mS. As you increase this number, the movement of the analog input is slower. At its maximum setting of 255, and input can only move about one percent every 15 seconds. The lower the damping factor, the faster the analog input will move and it will follow even slight changes in the monitored condition.

For example, you have a pressure gauge attached to Analog 1. You want to the 3300 to monitor even the slightest change in pressure. Therefore, you damping factor would be a small number.

Another example is a water level sensor attached to Analog 1. You do not want the sensor to follow the level change if the liquid splashes. Therefore, your damping factor would be a larger number.

PROGRAMMING THE DAMPING FACTOR

To program the damping factor, press **S, D A M**, a number from 1 to 255, then **#**. For example, to program the damping factor to be 55, press **S, D A M, 5, 5,** then **#**.

CHECKING THE DAMPING FACTOR

To check the damping factor, press **W**, then **D A M**. The 3300 will state a number from 1 to 255. For example, to check the damping factor programmed in the above section, press **W**, then **D A M**. The 3300 will say "Fifty five."

ANALOG INPUT CALIBRATION

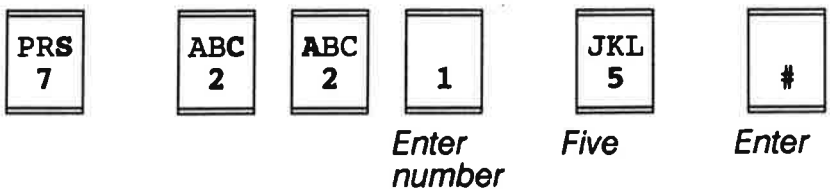
You can calibrate your analog inputs using the commands **CA1** (for Analog 1) and **CA2** (for Analog 2). The inputs can be calibrated from -15 to +15. However, the increments do not have a 1-to-1 correspondence to °F. You will have to experiment to adjust your inputs correctly.

In general, if an input reads high, you will subtract from it (-1 to -15). If it reads low, you will add to it (1 to 15). A negative number is entered by preceding it with a pause character, *.

CALIBRATING THE ANALOG INPUTS

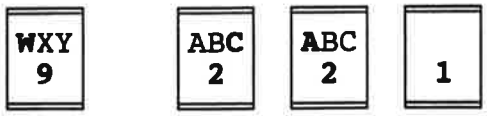
To calibrate an input, press **S, CA**, then the input number (1 or 2). The 3300 will say "Enter number." Next, press the key that correspond to the amount of calibration. Finally, press **#**.

For example, Analog 1 is reading approximately 5% low. To adjust it, press **CA1**. The unit will say "Enter number." Press **5**, then **#**.



CHECKING THE ANALOG INPUT CALIBRATION

To check the calibration of an analog input, press **W**, **CA**, then the input number (**1** or **2**). The 3300 will state the amount of calibration. To check the example programmed in the above section, press **W**, then **CA1**. The 3300 will say "Five."



Five

THE OUTPUTS

The 3300 has 3 built-in outputs which can be connected to the relay output modules. The accessory modules can be used to control output devices, such as lights, motors, and pumps. The unit can be programmed to change the state of an output device when the *normal* condition of the alert input changes. It also can be programmed to change the state of the output device when the high or low limit of an analog input is exceeded. Output 1 can also be configured to be time-dependent. The 3300 can be programmed to activate the device attached to Output 1 during a certain time period and de-activate the device during another time period (see OUTPUT 1 ACTIVATION TIMES, page 59).

THE OUTPUT OPTIONS

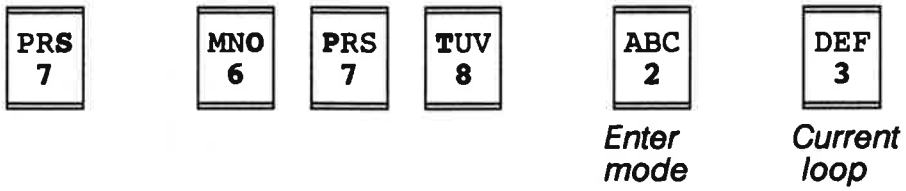
The output option allows you to program what controls the 3300's automatic changing of the output state. The output state can be automatically controlled by the Alert inputs or the Analog inputs. With Alert and Analog control, each output is pre-programmed to be controlled by a specific input. Output 1 can be controlled by Alert 1 or Analog 1. Output 1 can also have time-dependent control. Output 2 is controlled by Alert 2 or Analog 2, only. Output 3 is controlled by Alert 3 or Analog 2.

PROGRAMMING THE OUTPUT OPTIONS

To program an output option, press **S**, then the three letter command **O P T**. Next, press the number of the output (**1**, **2**, or **3**). The 3300 will say "Enter mode." To have no automatic control, press **0**. The 3300 will say "None." To have Alert input control, press **1**. The 3300 will say "Alert condition." To have Analog input control, press **3**. The 3300 will say "Current loop." To program Output 1 to have time-dependent control, press **2**. The 3300 will say "Time."

OPTIONS	ENTRY NUMBER
No input control	0
Alert input control	1
Time-dependent control	2
Analog input control	3

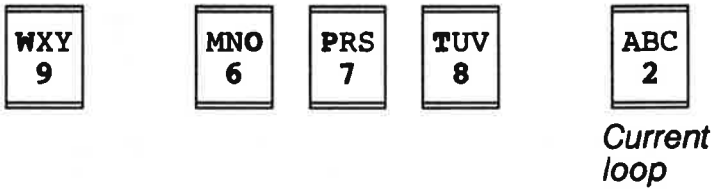
For example, to program Output 2 to be controlled by Analog 2, press **S, O P T,** then **2.** The 3300 will say "Enter mode." Since you want the output to be controlled by the Analog input, press **3.** The 3300 will say "Current loop" and automatically set Output 2 to be controlled by Analog 2.



CHECKING OUTPUT OPTION

To check an output's control option, press **W,** then **O P T,** followed by the number of the output (**1, 2,** or **3**). The 3300 will say "None" if there is no input control. It will say "Alert condition" if it is controlled by an alert input. If the output is controlled by an analog input, the unit will say "Current loop." If Output 1 has time-dependent control, the 3300 will say "Time."

For example, to verify that Output 2 is controlled by Analog 2 in the above example, press **W, O P T,** then **2.** The 3300 will say "Current loop."



THE OUTPUTS' ANALOG LIMITS

If you set an output to be controlled by an analog input, you must set the high and low readings at the input that will cause the output state to change. These limits are separate from the high and low analog limits that cause an alert dial-out, though they can have the same values. For Analog 2, you can program a limit from -20° F to +150° F. For Analog 1, you can program a limit from 0% to 100%.

NOTE:

Please note that the output limits are individual to each output. Even though both Outputs 2 and 3 can be controlled by Analog 2 simultaneously, they can have individual output limits. The output limits are also separate from the analog alarm limits, though they can have the same values.

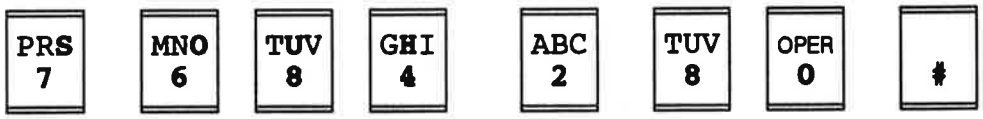
PROGRAMMING THE HIGH OUTPUT LIMIT

The high output limit is the high reading from the analog input that will cause the 3300 to change the output's state. To set it, press **S,** then **O U H.** Next, press the

number of the output (**1**, **2**, or **3**). The 3300 will say "Enter limit." Press the digits corresponding to the number. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter."

For example, Output 2 is controlled by Analog 2, which has TEMPERATURE input. The high limit must be in the temperature range -20° F to +150° F. You want the 3300 to change the state of the output when the reading at Analog 2 is 80° F.

To program this limit, press **S, O U H**, then **2**. The 3300 will say "Enter limit." Press **8**. The unit will say "Eight." Press **0**. The unit will say "Zero." Press **#**. The 3300 will say "Enter."



Enter limit *Eight* *Zero* *Enter*

CHECKING THE HIGH OUTPUT LIMIT

To check an output limit, press **W**, then **O U H**. Next, press the number of the output (**1**, **2**, or **3**). The 3300 will say "(number) percent" for Analog 1 and "(number) degrees" for Analog 2.

For example, to check that Output 2 in the above example was programmed with a high limit of 80° F, press **W, O U H**, then **2**. The 3300 will say "Eighty degrees."

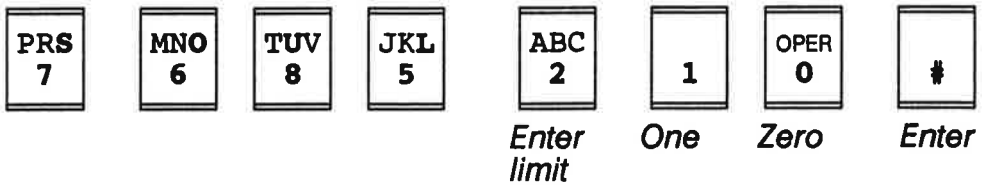
Eighty degrees

PROGRAMMING THE LOW OUTPUT LIMIT

The low output limit is the low reading from the analog input that will cause the 3300 to change the output's state. To set it, press **S**, then **O U L**. Next, press the number of the output (**1**, **2**, or **3**). The 3300 will say "Enter limit." Press the digits corresponding to the number. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter."

For example, Output 2 is controlled by Analog 2, which has TEMPERATURE input. The low limit must be in the temperature range -20° F to +150° F. You want the 3300 to change the state of the output when the reading at Analog 2 is 10° F.

To program this limit, press **S, O U L**, then **2**. The 3300 will say "Enter limit." Press **1**. The unit will say "One." Press **0**. The unit will say "Zero." Press **#**. The 3300 will say "Enter."

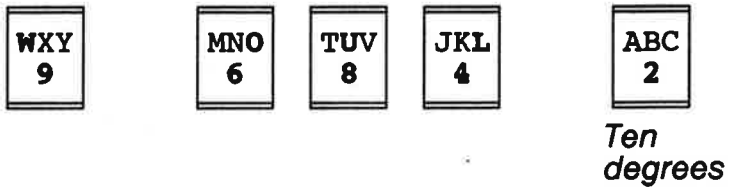


To input negative temperature setpoints, precede your number by *****. For example, to set the Analog input 2's low limit to be -20 F, you would press **S, A N L, 2, * 2 0,** then **#.**

CHECKING THE LOW OUTPUT LIMIT

To check an output limit, press **W**, then **O U L.** Next, press the number of the output (**1, 2,** or **3**). The 3300 will say "(number) percent" for Analog 1 and "(number) degrees" for Analog 2.

For example, to check that Output 2 in the above example was programmed with a low limit of 10° F, press **W, O U L,** then **2.** The 3300 will say "Ten degrees."



OUTPUT 1 ACTIVATION TIMES

The programmed activation times are the times between which Output 1 is activated if it is under time-dependent control. They are programmed using the military equivalent of standard time. The activation times can only be programmed in hours; minutes cannot be specified.

STANDARD	MILITARY	STANDARD	MILITARY
12 AM	0	12 PM	12
1 AM	1	1 PM	13
2 AM	2	2 PM	14
3 AM	3	3 PM	15
4 AM	4	4 PM	16
5 AM	5	5 PM	17
6 AM	6	6 PM	18
7 AM	7	7 PM	19
8 AM	8	8 PM	20
9 AM	9	9 PM	21
10 AM	10	10 PM	22
11 AM	11	11 PM	23

PROGRAMMING OUTPUT 1 ACTIVATION TIMES

To program in the Output 1 activation times, press **S**, then **S B T**. The 3300 will say "Enter morning time." Press the digits corresponding to the military equivalent of the morning standard time when Output 1 is to be *DE-ACTIVATED*. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Then, press **#**. The unit will say "Enter evening time." Press the digits corresponding to the military equivalent of the evening standard time when Output 1 is to be *ACTIVATED*. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter."

For example, Output 1 is programmed to be time-dependent and it is attached to a light. The 3300 is to be programmed to turn off the light at 6 AM and to turn *on* the light at 7 PM. Those are the morning and evening times, respectively, that you program into the 3300. Press **S**, then **S B T**. The 3300 will say "Enter morning time." Referring to the above conversion chart, you see that the military equivalent of 6 AM is 6. Press **6**. The 3300 will say "Six." Next, press **#**. The 3300 will say "Enter evening time." Again refer to the above conversion chart. The military equivalent of 7 PM is 19. Press **1**, then press **9**. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Next, press **#**. The unit will say "Enter."

Enter morning time *Six* *Enter evening time* *Two* *Nine* *Enter*

CHECKING OUTPUT 1 ACTIVATION TIMES

To check the Output 1 activation times, press **W**, then **S B T**. The 3300 will say "Morning: (number) AM. Evening: (number) PM."

For example, to check the activation times programmed in the above section, press **W**, then **S B T**. The 3300 will say "Morning: Six AM. Evening: Seven PM."

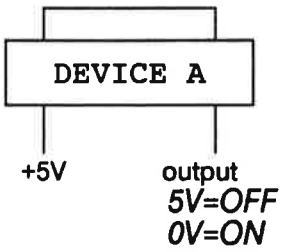
Morning Six AM
Evening Six PM

THE OUTPUT WIRING

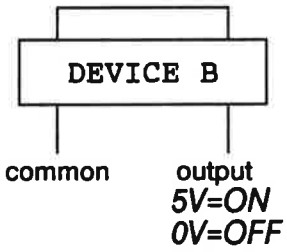
There are two ways an output device is wired, either *normally open* or *normally closed*. The 3300 allows you to adjust the wiring of your outputs. However, if you do not program the outputs' wiring, they have a default setting of *normally open*.

Typically, a device is *normally open*, which means that the accessory module is being controlled by the output terminal and the 5 V terminal. However, some devices are *normally closed*, which means that the accessory module is being controlled by the output terminal and *common*.

NORMALLY OPEN



NORMALLY CLOSED



PROGRAMMING THE OUTPUT WIRING

To program the output wiring, press **S, W I R**, and the number of the output (**1, 2,** or **3**). Next, press **1** if the output device is *normally open* (like device A) or **0** if it is *normally closed* (like device B). The 3300 will say "Normally open" or "Normally closed," respectively.

For example, the device wired to Output 2 is *normally closed*. To program the wiring, press **S, W I R, 2,** then **0**. The 3300 will say "Normally closed."

Normally closed

CHECKING THE OUTPUT WIRING

To check the output wiring, press **S, W I R**, and the number of the output (**1, 2,** or **3**). The 3300 will say "Normally open" or "Normally closed."

For example, to check the output wiring programmed in the above example, press **S, W I R,** then **2**. The 3300 will say "Normally closed."

Normally closed

OUTPUT ACTIVATION DIRECTION

The output activation direction tells the 3300 under what circumstances an output is to be adjusted. Each output can be controlled automatically by the alert inputs, the analog inputs. Output 1 can also be time-dependent. Refer to *THE OUTPUT OPTIONS*, on page 56.

The output activation is specific for each automatic controller. Normally, the activation direction is forward. However, certain applications of the 3300 may need the activation direction to be reversed.

FORWARD	REVERSE
TIME = open ALERT = close AN HI = close AN LO = open	TIME = close ALERT = open AN HI = open AN LO = close

Open and *close* are the state of the relay. An output will activate when the relay switches to that particular state. For example, Output 2 is forward and controlled by an Alert condition. When an alert condition occurs, the relay switch will close, and the output will be activated. However, if the activation is reversed, the output will be activated when the switch opens.

EXAMPLE 1: You have an air conditioner wired to an output and programmed to turn on at 80° F and off at 75° F. When the input temperature sensor reads that the local temperature has dropped below 75° F, the air conditioner will turn off. If the local temperature exceeds 80° F, the air conditioner will turn on. That is forward activation.

EXAMPLE 2: You have a heater wired to an output and programmed to turn off at 65° F and turn on at 60° F. When the input temperature sensor indicates that the local temperature has dropped below 60° F, the heater will turn on. If the local temperature exceeds 65° F, the heater will turn off. That is reverse activation.

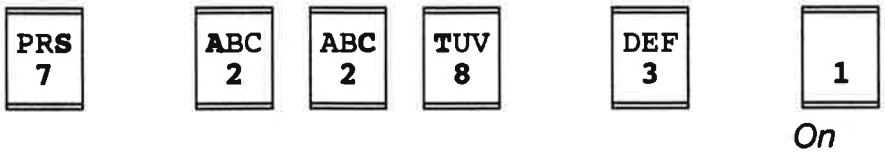
Note: Analog high/low temperature limits are independent of output limits. Therefore, an alarm dial-out will not occur unless the analog high/low limits are set for the same values.

If you do not program an activation direction, the default setting is forward.

PROGRAMMING THE OUTPUT ACTIVATION DIRECTION

To program the output activation direction, press **S**, **A C T**, then the output number (**1**, **2**, or **3**). To have the direction forward, press **0**; to have it reversed, press **1**. The 3300 will say "Off" and "On," respectively.

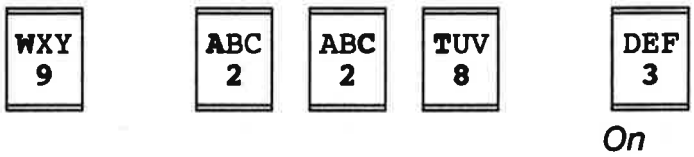
For example, you want to reverse the activation direction on Output 3. You do so by pressing **S**, **A C T**, **3**, then **1**. The 3300 will say "On."



CHECKING THE OUTPUT ACTIVATION DIRECTION

To check the output activation direction, press **W, A C T,** then the output number (**1, 2,** or **3**). If the direction is forward, the unit will say "Off. If the direction is reversed, it will say "On."

To check the output activation in the above example, press **W, A C T, then 3**. The 3300 will say "On."



THE THERMOSTATIC SETBACK

When you use Analog 2 to control Output 2 and/or Output 3, you can program a *thermostatic setback* into the control. This allows you to program the 3300 so that the temperature limits controlling Output 2 and Output 3 will be off-set a specified number of degrees. This *setback differential* is automatically added to the temperature limits for Output 2 and subtracted from the temperature limits for Output 3. The device connected to Output 2 must be some kind of cooling device (such as a fan or air conditioner). The device connected to Output 3 must be some type of heating device (such as a heater).

For example, Analog 2 is controlling Output 2, which is attached to an air conditioner. The 3300 is programmed to turn the air conditioner on when the temperature reaches 85° F , and off when it reaches 75° F . To conserve energy during the night, you can program the 3300 to off-set the temperature limits 5° upward between certain times. The air conditioner will now only be activated when the temperature reaches 90 F, and it will be shut off if the temperature falls to 80° F.

THE SETBACK TIMES

The setback time is the same as the Output 1 activation time. The activation time is explained on page 59.

The programmed set-back times are the times between which the temperature limits are **NOT** offset by the setback differential. **They are also the times between which Output 1 is activated if it is under time-dependent control.** They are programmed using the military equivalent of standard time.

STANDARD	MILITARY	STANDARD	MILITARY
12 AM	0	12 PM	12
1 AM	1	1 PM	13
2 AM	2	2 PM	14
3 AM	3	3 PM	15
4 AM	4	4 PM	16
5 AM	5	5 PM	17
6 AM	6	6 PM	18
7 AM	7	7 PM	19
8 AM	8	8 PM	20
9 AM	9	9 PM	21
10 AM	10	10 PM	22
11 AM	11	11 PM	23

PROGRAMMING SETBACK TIME

To program in the setback and Output 1 activation times, press **S**, then **S B T**. The 3300 will say "Enter morning time." Press the digits corresponding to the military equivalent of the morning standard time when the *thermostatic setback* is **NOT** being used. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter evening time." Press the digits corresponding to the military equivalent of the evening standard time when the *thermostatic setback* is to start. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter."

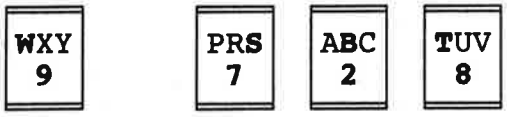
For example, Analog 2 is controlling Output 2, which is attached to an air conditioner. The 3300 is programmed to turn the air conditioner on when the temperature reaches 85 degrees, and off when it reaches 75 degrees. To conserve energy, you want to use the *thermostatic setback* between 6 PM and 6 AM. Therefore, the times when the *thermostatic setback* would **NOT** be in use would be between 6 AM and 6 PM. Those are the morning and evening times, respectively, that you program into the 3300.

These morning and evening times are also the times when Output 1 is activated if it is time-dependent.

CHECKING SETBACK TIME

To check the setback and Output 1 activation times, press **W**, then **S B T**. The 3300 will say "Morning: (number) AM. Evening: (number) PM."

For example, to check the setback times programmed in the above section, press **W**, then **S B T**. The 3300 will say "Morning: Six AM. Evening Six PM."



Morning Six AM
Evening Six PM

THE SETBACK DIFFERENTIAL

The *setback differential* is the number of degrees Fahrenheit the temperature limits for Outputs 2 and 3 are off-set higher and lower, respectively.

IMPORTANT!

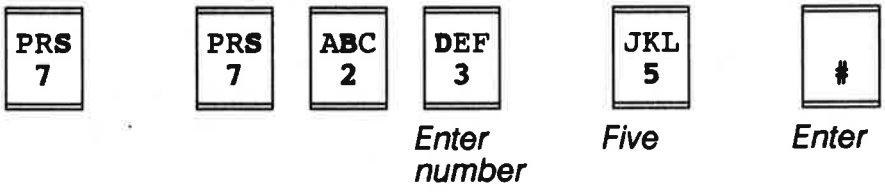
The thermostatic setback functions only when Outputs 2 and/or 3 are programmed to be analog-controlled. If you program a setback time for time-dependent control of Output 1, Outputs 2 and 3 will not be affected if they are not analog-controlled.

PROGRAMMING THE SETBACK DIFFERENTIAL

To program the *setback differential*, press **S**, then **S B D**. The 3300 will say "Enter number." Press the digits corresponding to the number of degrees the limits are to be off-set. **You must hear the 3300 say the number on the key just pressed before you can press the key for the next digit.** Finally, press **#**. The unit will say "Enter."

For example, Output 2's temperature limits are set at 85 (output device on) and 75 degrees (output device off). During the setback period (6 PM to 6 AM, from the above example), you want the limits to be off-set 5 degrees. Therefore, between 6 PM and 6 AM, Output 2's limits would be 90 and 80 degrees.

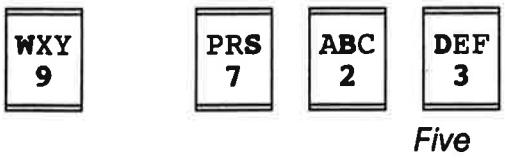
Press **S**, then **S B D**. The 3300 will say "Enter number." Press **5**. The 3300 will say "Five." Next, press **#**. The 3300 will say "Enter."



CHECKING THE SETBACK DIFFERENTIAL

To check the programmed *setback differential*, press **W**, then **S B D**. The 3300 will repeat the programmed number.

For example, to check the *setback differential* programmed in the above section, press **W**, then **S B D**. The 3300 will say "Five."

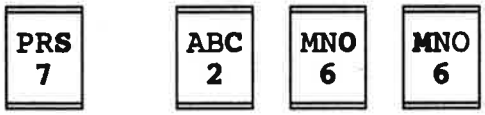


THE COMFORT ZONE

The 3300 offers a comfort zone feature for remote locations. This feature allows you to temporarily adjust the output limits so that the temperature at the remote location is comfortable to work in. To use the comfort zone feature, Outputs 2 and 3 must be automatically controlled by temperature. This is accomplished with the **S OPT** command (page 56).

PROGRAMMING THE COMFORT ZONE

S COM is the command that will adjust the output setpoints for two hours. When you give this command, the low limit on Output 2 will be adjusted to 65° F and the high limit to 70° F. The low limit on Output 3 will be adjusted to 77° F and the high limit to 80° F. However, the setpoints for alarm dial-out will **not** be adjusted. If you ask the 3300 the output limits during the 2-hour period, you will be told the temporary limits.



This arrangement can work with one or two stage cooling, or separate heating or cooling.

For one stage cooling, an air conditioner would be attached to Output 3. If the temperature is above 80° F, the air conditioner would be activated. When the temperature drops below 77° F, the air conditioner would be shut off.

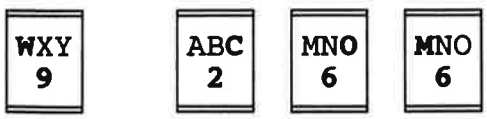
For two stage cooling, the primary device would be controlled from Output 2, and the secondary device would connect to Output 3. For example, there is a vent on Output 2 and a fan on Output 3. The vent would open if the temperature is above 70° F. If the temperature is above 80° F, the vent would still be open and the fan would also be activated. As the temperature drops, the fan shuts off at 77° F, and the vent closes if the temperature drops below 65° F.

If heating is to be used, the heater would be controlled by Output 2 and action reversed with the **ACT** command (page 62). So if the temperature is below 65° F, the heater would turn on, and be shut off when the temperature goes above 70° F.

At the end of the two hour comfort zone, the unit will go back to its programmed output limits. If the **S COM** command is re-issued, the two hours will then be restarted even if there is still time left.

CHECKING THE COMFORT ZONE STATUS

Pressing **W**, then **COM** will give the status of the zone. The unit will respond with "OFF" if the zone is not active. If the zone is active the unit will respond with the number of minutes remaining until the 3300 returns to its normal limits.



THE LOCAL ALARM CANCEL OPTION

The lighted red push button is used to stop the automatic *dial-out* caused by an alert condition. However, you can program the 3300 to allow only specific alarm conditions to be canceled locally.

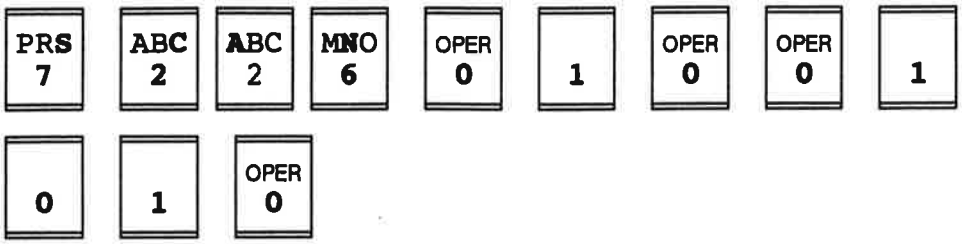
PROGRAMMING THE LOCAL ALARM CANCEL OPTION

To program which alarm conditions can be canceled locally, press **S**, then **C A N**. The 3300 will say "Alert condition one." Press **1** to enable to the local cancel or **0** to disable local cancel. The 3300 will say "Yes" or "No," accordingly. Next, the 3300 will say "Alert condition two." Press **1** or **0**. The 3300 will say "Yes" or "No," then "Alert condition three." Press **1** or **0**. The 3300 will say "Yes" or "No," then "Current loop one, low." Press **1** or **0**. The 3300 will say "Yes" or "No," then "Current loop one, high." Press **1** or **0**. The 3300 will say "Yes" or "No," then "Temperature two, low." The 3300 will say "Yes" or "No," then "Temperature two, high." Press **1** or **0**. The 3300 will say "Yes" or "No," then "Power out." Press **1** or **0**. The 3300 will say "Yes" or "No."

For example, to program the 3300 so that only alarms caused by Alert 2, Analog 1 high, or Temperature 2 high can be canceled locally press **S**, then **C A N**. The 3300 will say "Alert condition one." Press **0**. The 3300 will say "No. Alert condition 2." Press **1**. The unit will say "Yes. Alert condition three." Press **0**. The 3300 will say "No. Current loop one, low." Press **0**. The 3300 will say "No. Current loop one, high." Press **1**. The unit will say "Yes. Temperature two, low." Press **0**. The 3300 will say "No. Temperature two, high." Press **1**. The unit will say "Yes. Power out." Press **0**. The 3300 will say "No."

ALARM	LOCAL CANCEL
Alert condition 1	no (0)
Alert condition 2	yes (1)
Alert condition 3	no (0)
Analog 1, low	no (0)
Analog 1, high	yes (1)
Temperature 2, low	no (0)
Temperature 2, high	yes (1)
Power out	no (0)

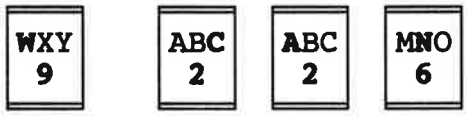
(NOTE: In the below example, the 3300's vocal response will not be shown. Instead, refer to the above chart.)



CHECKING THE LOCAL CANCEL

To check the local cancel selection, press **W**, then **C A N**. The 3300 will state each alert condition and say "Yes" if that condition can be canceled locally, or "No" if it cannot.

For example, to check the local cancel selection programmed in the above example, press **W**, then **C A N**.



The 3300 will say:

ALARM	COMMENT
Alert condition 1	no
Alert condition 2	yes
Alert condition 3	no
Analog 1, low	no
Analog 1, high	yes
Temperature 2, low	no
Temperature 2, high	yes
Power out	no

NOTES

CHAPTER 5
ADVANCED OPERATIONS

3300 ALARM RESPONSE

When an alarm occurs, the 3300 will immediately check for a programmed recognition time. If there is a programmed time, the unit will start its internal timer. During the recognition time period, the 3300 will constantly check to see if the alert condition still exists. If it goes away before the recognition period is over, the timer will stop. If the alarm goes away and comes back, the 3300 will restart the timer.

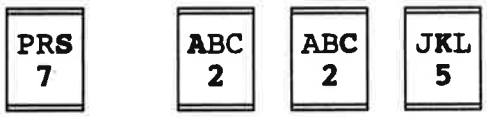
After the alarm has continuously lasted for the entire recognition time, it is considered to be present and unacknowledged. If the alarm then goes away, it will not be present though it is still unacknowledged.

As soon as an alarm is present, the 3300 immediately checks for any programmed output responses and adjusts the outputs accordingly. It then checks the telephone numbers (in sequence) for ANY unacknowledged alerts, present or not. It will then call the telephone numbers (again in sequence) that have any unacknowledged alerts.

If the 3300 is in data mode, it tries to connect with a computer or data terminal when it dials-out. If it does not connect to a computer or terminal, it sets the redial time for however long you programmed it to be.

ACKNOWLEDGING AN ALARM

To acknowledge an alarm with a touch-tone telephone, press **S**, then **A C K**. The 3300 will say "Okay."



Okay

There are two options for the date mode acknowledgement. Normally, if the unit connects, the alarm is automatically acknowledged. The 3300 will give a status report, then wait 10 seconds for the on-line command. To give the on-line command, press any two keys. If the on-line command is given, the caller can remain on-line with the unit to give additional commands. If the command is not received, the unit will disconnect.

The other option requires that the person give the on-line command, then the **ACK** command to acknowledge the alarm. If the 3300 connects to a computer or terminal, but the proper acknowledgement is not given, the unit will set the redial time to one hour. To choose this option, see the section of the data mode **MEM** commands on page 88.

With either option, you can call the unit back and acknowledge the alarm with the **ACK** command if you do not give the on-line command.

CANCELING AN ALARM

The lighted push button is used to stop the automatic dial-out caused by an alert condition. If an alarm is present, the LED should be blinking. Once you press the lighted push button, the LED should return to glowing steadily.

When you press lighted push button to stop an existing alert condition, the 3300 checks to see if that particular alert condition can be canceled (as programmed in **THE LOCAL ALARM CANCEL OPTION**, page 67). If the 3300 is on-line, the LED will blink slowly. If the alert can be canceled, the unit will disconnect from the telephone line and the LED will return to glowing steadily. If the 3300 is not on-line, the LED will blink rapidly. If the alert can be canceled, the LED will return to glowing steadily. In either case, if the alert cannot be canceled locally, the 3300 will ignore the cancel request and the LED will continue blinking.

ON-LINE	LOCAL CANCEL	3300'S RESPONSE
yes	yes	disconnect & steady LED
yes	no	(no response)
no	yes	steady LED
no	no	(no response)

NOTES

SECTION 3
DATA MODE

CHAPTER 6
DATA MODE

The 3300 can be accessed by any terminal or computer equipped with or connected to a 300 baud modem. If you are using a PC and modem, you must have communications software such as ProComm* or Crosstalk**. These are almost always included with the modem.

Before initiating a call to the 3300, make sure that the communications software configures your modem for 300 bps, 8 data bits, no parity, and 1 or 2 stop bits.

To initiate a call (get on-line) to the 3300, refer to your communications software instruction manual if you need assistance.

Once you are on-line with the 3300, programming and interrogations are simple. You will use the same three-letter commands as discussed in the voice mode section. However, no **S** for **SET** or **W** for **WHAT IS** are used in data mode. To obtain a list of the valid data mode commands and their meaning at any time while in data mode, type HLP after the prompt (**3300>**). Also, refer to Appendix A for a complete list of valid data mode commands.

When you call-in to the 3300 with a PC, the prompt **Password>** will appear on your monitor. If there is no programmed password, press **<RETURN>**. Otherwise, type the password after the prompt. If the password you type is incorrect, the word "**INVALID**" will be printed on your monitor and the 3300 will disconnect from the telephone line. Note: Sometimes when a data connection is made, extra characters are transmitted that the 3300 is not expecting. This can be from communications equipment protocol, or even phone line noise. If this has happened, you will see a few X's after the password prompt before you have typed anything. In order for the 3300 to correctly receive your password, press control-Z. You will start with a fresh password prompt.

If you type the correct password, the number of data mode log-in failures and the total voice/data log-in failures will appear on your monitor. The **consecutive data mode log-in failures** is the number of times someone has given an incorrect data mode password to the 3300. The **total voice/data log-in failures** is the total of all log-in failures in both voice and data modes. The sentence "**Type HLP for help menu**" will be underneath. The **3300>** prompt will now appear on your monitor. Your screen will look as follows:

---

* registered trademark of Datastorm Technologies, Inc. (1986)

** registered trademark of Microstuf, Inc. (1986)

```
--- 3300 V4.22 ---
Password>

000 consecutive data mode log-in failures
00000 total voice/data log-in failures
Type HLP for help menu

3300>
```

You may now type any one of the three-letter commands after **3300>**. To program the 3300 in data mode, type in a valid command. The unit will echo back the command you type in along with a command definition, followed by valid input values (such as 1 = ON and 0 = OFF)* and current parameter values will be listed on the screen. If you want to change the value of the parameter, type in the new value at the prompt (>), then press **<RETURN>**. Otherwise, just press **<RETURN>**. The 3300 will display in the following basic format:

(command)=(description)
(0 = NO, 1 = YES)*
(present value)>

* Not all commands

To interrogate the 3300, use the same procedure as if you were programming.

Example 1: You want to program the number of rings until the 3300 answers a call-in to 6. After **3300>** you type **RNG**, the three-letter command for *Rings Until Answer*. The following screen will come up on your monitor:

```
3300>RNG
RNG = Ring till answer
001 >
```

001> means that the number of *Rings Until Answer* is programmed to be 1.

If you want to change the number of rings to be 6. Type 6 after **001>**, then hit **<RETURN>**. **3300>** prompt will appear on your monitor. Type **RNG** to check that the number of rings was changed to 6. **006>** should appear on your monitor. Press **<RETURN>** and **3300>** will reappear. Your screen will look like the following:

```
3300>RNG
RNG = Ring till answer
001 > 6

3300>RNG
RNG = Ring till answer
006 >
```

Example 2: You would like to change the alert normality of Alert 1, Alert 2, or Alert 3. Type **ALT** after the **3300>** prompt. The following will appear on your screen:

```
3300>ALT
ALT = Alert normality
0 = N.C., 1 = N.O.
Al 1 = 1>
```

This means that Alert 1 is set at normally open. To change the normality to closed, type a 0 at the prompt. Otherwise, press **<RETURN>**. The next Alert will appear:

```
Al 2 = 1>
```

To change, press 0, or **<RETURN>** to get to Alert 3:

```
Al 3 = 1>
3300>
```

After the last Alert parameter has been programmed or interrogated, the **3300>** prompt should appear. You may now type any other command.

Example 3: You want to program the arming time for your motion sensor to 60 seconds. Type **ARM** after the prompt. The following should appear on your monitor:

```
3300>ARM
ARM = Arming time
030>
```

The default value for the arming time is 30 seconds expressed as 030. To change the parameter to 60 seconds type 60 after the prompt. The following should appear:

```
030>60
3300>
```

To check the arming time, type **ARM** at the prompt. The new time, 060, should appear before the prompt.

NOTE: If you type in an invalid command or value for a parameter you will receive the message **?INPUT ERROR?**. Just retype the command for the parameter you wish to program to continue. Refer to Appendices A, B, and E for valid commands and reference pages for parameter default and limits.

DATA MODE ALARM RESPONSE

When the 3300 dials out with a data alarm message, it will try to connect with a data device (i.e. computer). When it connects to a data device, it will print the message "3300 Alarm" on the first line of the screen and "3300 V4.22" on the second line. A regular status report will print to your screen, stating the existing alarm. The unit will then wait 10 seconds for **<RETURN>** to be pressed twice. If that happens, the 3300 will ask for the password. If **<RETURN>** is not pressed twice, the 3300 will disconnect. Your screen will look like the following:

```
--- 3300 Alarm ---
--- 3300 V4.22 ---

Alarms Since 02/17/91 14:32:13
Al 2   EXISTS

Present Alarms as of 2/17/91 14:33:34
Al 2   EXISTS

Present Status
Unit  #000042
ID  # 2158919464
LOC:  Butte Unit 2
An 1      000%
An 2      077 Degrees F
```

If you type **<RETURN>** twice during the 10 second wait, your screen will look like the following:

```
--- 3300 Alarm ---
--- 3300 V4.22 ---

Alarms Since 02/17/91 14:32:13
Al 2   EXISTS

Present Alarms as of 2/17/91 14:33:34
Al 2   EXISTS

Present Status
Unit  #000042
ID  # 2158919464
LOC:  Butte Unit 2
An 1      000%
An 2      077 Degrees F
(10 second wait)*

Password > XXXXXXX

000 consecutive data mode log-in failures
00000 total/data log-in failures
Type HLP for help menu

3300>
```

* *will not be printed on the screen*

ACKNOWLEDGING AN ALARM

To acknowledge an unacknowledged alarm, type **ACK** after **3300>**. After you enter the command, the unit will list the outstanding unacknowledged alarms and ask you if you would like to acknowledge them. Your screen will show the following:

```
--- 3300 Alarm ---
--- 3300 V4.22 ---

Alarms Since 02/17/91 14:32:13
Al 2   EXISTS

Present Alarms as of 2/17/91 14:33:34
Al 2   EXISTS

Present Status
Unit  #000042
ID  # 2158919464
LOC:  Butte Unit 2
An 1      000%
An 2      077 Degrees F
```

(continued)

```
Password > XXXXXXX

000 consecutive data mode log-in failures
00000 total/data log-in failures
Type HLP for help menu

3300>ACK
ACK = Unacknowledged alerts
Alarms Since 02/17/91 14:32:13
Al 2   EXISTS

0 = NO, 1 = YES
Acknowledge? 1
All Acknowledged
```

COMMANDS SPECIAL TO DATA MODE

THE DATA MODE PASSWORD

The data mode offers a password that is independent of the voice mode password. The data mode password can be up to 30 characters in length and can include any letter, number, or character that is found on a PC keyboard. The data mode password is always enabled when you call-in to the 3300. However, if no password is programmed, all you have to do is press **<RETURN>** after the password prompt.

To program the data mode password, type **PAS** after **3300>**. The 3300 will write the following to your screen:

```
3300>PAS
PAS = Password
Password >
```

Type in your password after the **Password** > prompt. Every time you press a character, an 'X' will appear after the prompt. Press **<RETURN>** after you finish typing your password. **Verify** > will appear on the screen. Retype your password in exactly. If you type the password in identically, the 3300 will print "**OK**" on your screen and enter the password in its memory. If you do not type it in correctly, the 3300 will print "**Invalid**" on your screen and return you to the **3300>** without changing the password.

For example, you want to set your data mode password to be *BH5^LL2&*. Type **PAS** after **3300>**. Then type *BH5^LL2&* after **Password** > and press **<RETURN>**. Type *BH5^LL2&* after **Verify** >, then press **<RETURN>**. Your screen should look like the following:

```
3300>PAS
PAS = Password

Password > XXXXXXXX
Verify   > XXXXXXXX
  OK
3300>
```

THE INPUT AND OUTPUT LABEL NAMES

The data mode offers the option of assigning your alert inputs, analog inputs, and outputs label names. Each label name can be 6 characters long. The label names will be used in all reports, plus in programming the input and output parameters.

NOTE:

If the label name is 6 characters long, the 3300 will automatically advance to the next parameter, so you do not have to press **<RETURN>**.

To scroll through the inputs and outputs without changing the label name, press **<RETURN>**.

To program the label name, type **LAB** after **3300>**. **Al 1 >** will appear on your screen. Type in the label name for Alert 1 and press **<RETURN>**. **Al 2 >** will come up on your screen. After you type the label name for Alert 2, press **<RETURN>** and **Al 3 >** will print on your screen. The alert inputs are followed by the two analog inputs, then the three outputs. Your screen will look like the following:

```
3300>LAB
LAB = Label names

Al 1  >
Al 2  >
Al 3  >
An 1  >
An 2  >
Out 1 >
Out 2 >
Out 3 >

3300>
```

For example, Alerts 1 and 2 are monitoring 2 tanks; Alert 3 is monitoring a window; Analog 1, a pressure gauge; Analog 2, temperature; Output 1 is connected to an air conditioner; Output 2, a heater; and Output 3, a fan. You want to give label names to all of the inputs and outputs. Type **LAB** after **3300>**. Next, type 'Tank1' after **Al 1 >**, and press **<RETURN>**. Type 'Tank2' after **Al 2 >** and press **<RETURN>**. Type 'Window' after **Al 3 >** (you will not have to press **<RETURN>** since the label name is 6 characters long). Now type 'Prsure' after **An 1 >**. Next, type 'Temp' after **An 2 >** and press **<RETURN>**. Type 'Aircon' after **Out 1 >**. Now type 'Heater' after **Out 2 >**. Finally, type 'Fan' after **Out 3 >** and press **<RETURN>**. Your screen should look like the following:

```
3300>LAB
LAB = Label names

Al 1  > Tank1
Al 2  > Tank2
Al 3  > Window
An 1  > Prsure
An 2  > Temp
Out 1 > Aircon
Out 2 > Heater
Out 3 > Fan

3300>
```

To check the label names, type **LAB** after **3300>**. Press **<RETURN>** to scroll through the options without changing the label names. Your screen should look like the following:

```
3300>LAB
LAB = Label names

Tank1  >
Tank2  >
Window  >
Prsure  >
Temp  >
Aircon >
Heater >
Fan >

3300>
```

THE LOCATION NAME

The location name is a reference that appears only in the data mode status reports. It is the location of the unit. The location name can be up to 16 characters in length.

To program the location name, type **LOC** after **3300>**. The next prompt that will appear will have 16 spaces before the >. Type the location name after the prompt, then press **<RETURN>**. If the location name is 16 characters long, you do not have to press **<RETURN>**.

For example, you want the location name to be the town where your unit is located (Butte Unit 2). Type **LOC** after **3300>**. Next, type 'Butte Unit 2' after *(16 spaces)*>. Finally, press **<RETURN>**, since the location name is not 16 characters. Your screen should look like the following:

```
3300>LAB
LOC = Location name

                > Butte Unit 2

3300>
```

To check the location name, type **LOC** after **3300>**. Press **<RETURN>** after **Butte Unit 2>**. Your screen should look like the following:

```
3300>LAB
LOC = Location name

Butte Unit 2 >

3300>
```

THE UNIT NUMBER

The unit number is a reference number that appears in status reports. It is the only reference that appears in the data log. The unit number can be 6 characters long.

To program the unit number, type **UNN** after **3300>**. **000000>** will appear on the screen. Type the unit number after the prompt and press **<RETURN>**. If the unit number is 6 characters long, you do not have to press **<RETURN>**.

For example, to program the unit number to be 42, type **UNN** after **3300>**. Next, type 42 after **000000>**, and press **<RETURN>**. Your screen should look like the following:

```
3300>UNN
UNN = Unit number

000000 > 42

3300>
```

To check the unit number, type **UNN** after **3300>**. **42 >** should come up on your screen. Press **<RETURN>**. Your screen should look like the following:

```
3300>UNN
UNN = Unit number

42 >

3300>
```

THE ALERT HISTORY REPORT

One feature of the data mode is the Alert History feature. The 3300 is capable of logging alert data by event or by time. Each entry contains a time stamp, the present state of all alarms, and the present state of all inputs and outputs. The unit is capable of storing 32 entries. This can be expanded to 224 entries. Contact Phonetics at (215) 558-2700 for details.

To obtain an Alert History summary, type **HIS** after **3300>**. The 3300 will print definitions for the 6 **HIS** options. The event logging and automatic logging status (ON or OFF), the number of hours between each automatic logging, and the data write information will also be printed. Your screen will look like the following:

```
3300>HIS
HIS A = Auto logging
HIS D = Disable event logging
HIS E = Enable event logging
HIS L = Give detailed log listing
HIS R = Reset data log messages
HIS X = Give log listing with quotes

Summary report

Event logging ON
Auto logging OFF
Hours 000
00000 total data writes
032 maximum available records
000 records used

3300>
```

Event logging is the logging of an alarm condition when it occurs. **Automatic logging** is the routine logging of events every number of user-programmed hours. **Hours** is the time period between each automatic logging. **Total data writes** is the total number of data writes there have been to memory since the unit was first activated. It cannot be reset. **Maximum available records** is the number of messages that can possibly be stored in the unit's memory (re: optional expanded

data logging). It should be 32 or 224. **Records used** is the number of data log messages in the unit's memory.

Each letter represents a different function of the alert history. **A** allows you to program the auto logging feature and the number of hours (from 1 to 255) between each log entry. **D** disables event logging, while **E** enables event logging. **L** gives a complete listing of all logged events. **R** clears all events from memory, but keeps all programmed parameters the same and does not affect the total number of data writes. **X** gives a complete listing of all logged events, but with quotation marks around the parameters. This allows the listing to be easily adapted for use in a LOTUS 123* file. To use a certain alert history function, type **HIS**, then the function's letter. For example:

```
3300>HIS A
0 = OFF, 1 = ON
Auto logging = 1 >
Hours 1 > 24
```

```
3300>HIS D
Logging DISABLED
```

```
3300>HIS E
Logging ENABLED
```

```
3300>HIS R
History Report Reset
```

If you ask for a history report after it has been reset, you will get the following messages:

```
3300>HIS L
No history report
```

```
3300>HIS X
No history report
```

DATA LOG FORMAT

The data log format only takes up one line and has two formats. The second format is identical to the first except that the text fields are surrounded by quotation marks. This is to allow the data to be imported into LOTUS 123™ . The one line

---

* registered trademark of Lotus Development Corporation

format is initiated by **HIS L**, the second format for LOTUS 123™ importing is initiated by **HIS X**. The following is the field description for the new formats:

UNIT #, DATE, TIME, ANALOG, PRES ALARMS, STATUS, UNACK ALARMS, OUTS

UNIT #	This is the number programmed into the 3300 as identification by the command UNN.
DATE	The date is in the format YY/MM/DD.
TIME	The time is HH/MM/SS.
ANALOG	The first number is the present value of analog input one, followed by the present value of analog two.
PRES ALARMS	The next eight numbers represent the present alarm status. A 0 represents OK, and a 1 represents EXISTS. This is the order of the flags: ALT1, ALT2, ALT3, ANLG1 LO, ANLG1 HI, ANLG2 LO, ANLG2 HI, POWER OUT
STATUS	The next three fields are the status inputs. **OP** represents OPEN, and **CL** represents CLOSED.
UNACK ALARMS	The next eight fields are the alarms that have existed, but have not been acknowledged yet. They are in the same order as the **PRES ALARMS** field. ALT1, ALT2, ALT3, ANLG1 LO, ANLG1 HI, ANLG2 LO, ANLG2 HI, POWER OUT
OUTS	The last three fields show the present state of the outputs. **ON** is ON, and **OF** is OFF.

Further information on data mode and LOTUS 123™ compatibility is in the optional **Terminal Communication software** manual (See Appendix C).

MEM COMMAND OPTIONS

There are some additional programmable options that can only be programmed in data mode. All of these options are accessible through the **MEM** command. The **MEM** command enables you to directly access memory locations. After you type **MEM**, you will then be asked for the memory bank. This will always be 0. Then you will be prompted for an offset, which is selected from the following list.

OFFSETS	DESCRIPTION
5F	NULLS ON
65	POWER UP DEFAULTS
AC	DATA LOG MODE
AD	SECOND POWER OUT
AE	DATA ACKNOWLEDGEMENT
B2	ANALOG 1 CALIBRATION
B3	ANALOG 2 CALIBRATION
B4	AUTO STATUS OPTION

NULLS ON: This option is directed towards slow hardcopy terminals. If this is set to 01, then all carriage returns in data mode will be followed by five null characters to allow time for the carriage return. If it is set to 00, there are no nulls.

POWER UP DEFAULTS: This location is used to set the default state of the three outputs upon power up. The default state for the three outputs is normally off. However, you have the following output default state options:

OUT 1	OUT 2	OUT 3	DATA
OFF	OFF	OFF	07
OFF	OFF	ON	06
OFF	ON	OFF	05
OFF	ON	ON	04
ON	OFF	OFF	03
ON	OFF	ON	02
ON	ON	OFF	01
ON	ON	ON	00

To change the default state, type the **DATA** option number.

DATA LOG MODE: When the data logger is being used in automatic mode, this option determines whether the units are in minutes or hours. The units are normally set to hours, but can be changed to minutes by placing 01 in this offset.

SECOND POWER OUT: This option is for more detailed power failure sensing. If this option is enabled, the third alert condition is disabled, and replaced by a secondary power-out alarm. This enables you to have independent power-out alarms with different recognition times, which means you can distinguish between short- and long-term power failures. If this is selected, the previous status and programmable options pertaining to Alert condition 3 will now pertain to this secondary power-out alarm. This option is enabled by placing 01 in the offset.

DATA ACKNOWLEDGEMENT: This option is to select the requirements for acknowledgement in a data mode alarm call-out. This is normally set to 00, which means that if the unit connects to a computer or terminal to give its message, it is considered acknowledged and will stop its call-out. If you set this to 01, then the unit will not stop calling until an acknowledgement command is given. If the unit does connect to a computer or terminal, but gets no human response, it will continue dialing every hour until acknowledged.

ANALOG CALIBRATION: In some instances, it is necessary to calibrate the analog inputs. Offset B2 is for calibrating analog 1, and offset B3 is for calibrating analog 2. Use the following chart for calibrating.

PROBLEM	DATA
CURRENT LOOP TOO HIGH	8n
CURRENT LOOP TOO LOW	0n
TEMPERATURE TOO HIGH	8n
TEMPERATURE TOO LOW	0n

"n" can be from 0 to 9, depending of how far you need to adjust.

AUTO STATUS OPTION: Normally, if the unit is called in data mode, you must first give a password. However, in some applications, you may want a status report when first you call-in, but not get the 3300 ready for programming. By placing 01 before the offset, the 3300 will give a status report before the password is requested. This can also take place in voice mode, but only if the voice mode password is enabled.

After choosing the offset, you may then enter your new data. Pressing <**RETURN**> will then exit. Your screen should look like the following:

```
3300>MEM
MEM = Program EEPROM memory
Bank > 0
Offset (HEX) ? B2
B2=00 > 01
B3=02 >

3300>
```

THE STATUS REPORT

With data mode, you can have a status report sent to your printer or monitor. The status report is similar to the vocal status report of voice mode. It contains present alarm status, as well as any alarms that may have occurred since an alarm was last acknowledged. The report also contains the present condition of the analog inputs.

An example of a status report is as follows:

```
3300>STA
STA = Status report

Alarms Since 02/17/91 17:00:02
None

Present Alarms as of 02/17/91 09:21:33
Al 3   EXISTS


Present Status
Unit #000042
ID # 2158919464
LOC: Butte Unit 2
An 1   042%
An 2   073 Degrees F
```

THE SECOND STATUS REPORT FORMAT

There is a second format for the present status report, which is used to import the status report into LOTUS 123 ™. The second format is the same as the data report for importing into LOTUS 123™. The command is **STA X**.

UNIT #, DATE, TIME, ANALOG, PRES ALARMS, STATUS, UNACK ALARMS, OUTS

3300>STA X
"A014269",910328,092326,042,073,0,0,1,0,0,0,0,0,"OP","OP","OP",0,0,0,0,0,0,0,0,"ON","OF","OF"

3300>

DISCONNECTING FROM THE 3300

To disconnect from the 3300, type **QUI** after *3300*>. Type 0 or 1 after "Are you sure?" and press <**RETURN**>. Your screen will look as follows:

```
3300>QUI
QUI = End session
0 = NO, 1 = YES
Are you sure? 1

Have a good day!
```

The 3300 will time-out 5 minutes after your last programming or interrogation.

NOTES

APPENDICES

APPENDIX A: DATA MODE - ALL VALID KEYBOARD COMMANDS		
FUNCTION	**KEY COMMAND**	**REFERENCE**
Unacknowledged alerts	ACK	p. 81
Activation direction	ACT	*
Alert normality	ALT	p. 79
Analog high limits	ANH	*
Analog low limits	ANL	*
Local cancel	CAN	*
Carrier wait	CAR	*
Comfort zone	COM	*
Analog damping	DAM	*
Date	DAT	*
Enable password	ENP	*
Exit data mode	EXI	*
Alert history (A D E L R X)	HIS	p. 86
Help	HLP	p. 77
ID number	IDN	*
Input status	IST	*
Integrity test number	ITN	*
Label names	LAB	p. 83
Location name	LOC	p. 84
Program EEPROM memory	MEM	*
Output options	OPT	*
Output high limits	OUH	*
* See pages 77-80. For further explanation and reference, see Appendix B.		

FUNCTION	KEY COMMAND	REFERENCE
Output low limits	OUL	*
Output state	OUT	*
Password	PAS	p. 82
Phone numbers	PHO	*
Quit	QUI	p. 91
Recognition times	REC	*
Redial time	RED	*
Reset EEPROM	RES	*
Ring until answer	RNG	p. 78
Setback differential	SBD	*
Setback times	SBT	*
Dial-out selection	SEL	*
Status report	STA	p. 90
Enable TAD compatibility	TAD	*
Start integrity test	TES	*
Time	TIM	*
Tone/pulse selection	TON	*
Unit number	UNN	p. 85
Voice/data selection	VOI	*
Wiring for outputs	WIR	*
* See pages 77-80. For further explanation and reference, see Appendix B.		

APPENDIX B: ALL VALID TOUCH-TONE SEQUENCES

FUNCTION	KEY COMMAND	USER INPUT	REFERENCE
Acknowledge alarm State existing alarm	S ACK (7 225) W ACK (9 225)		pp. 38
Output direction	S ACT (7 228) S ACT (7 228) W ACT (9 228) S ACT (7 228) S ACT (7 228) W ACT (9 228) S ACT (7 228) S ACT (7 228) W ACT (9 228)	1 0 1 1 1 2 0 2 1 2 3 0 3 1 3	p. 62
Alert input normality	S ALT (7 258) S ALT (7 258) W ALT (9 258) S ALT (7 258) S ALT (7 258) W ALT (9 258)	1 0 1 1 1 2 0 2 1 2	p. 31
High analog limits	S ANH (7 264) W ANH (9 264) S ANH (7 264) W ANH (9 264)	1 (number) # 1 2 (number) # 2	p. 29
Low analog limits	S ANL (7 265) W ANL (9 265) S ANL (7 265) W ANL (9 265)	1 (number) # 1 2 (number) # 2	p. 30
Analog 1 calibration	S CA1 (7 221) W CA1 (9 221)	(number) #	p. 55
Analog 2 calibration	S CA2 (7 222) W CA2 (9 222)	(number) #	p. 55
Local alarm cancel W CAN (9 226)	S CAN (7 226)	0 1 (8 times)	p. 67
Carrier wait time	S CAR (7 227) W CAR (9 227)	(number) #	p. 53

FUNCTION	KEY COMMAND	USER INPUT	REFERENCE
Comfort zone	S COM (7 266) W COM (9 266)		p. 66
Damping factor	S DAM (7 326) W DAM (9 326)	(number) #	p. 54
Date	S DAT (7 328) W DAT (9 328)	(mo.)#(day)#(yr)#	p. 26
Password enable Password disable	S ENP (7 367) S ENP (7 367) W ENP (9 367)	1 0	p. 34
Exit voice mode call	S EXI (7 394)		p. 39
Number of calls	W HIS (9 447)		p. 49
ID number	S IDN (7 436) W IDN (9 436)	(number) #	p. 20
Status-only alerts	W IST (9 478)		p. 32
Test number	S ITN (7 486) W ITN (9 486)	(number) #	p. 53
Output options	S OPT (7 678) S OPT (7 678) S OPT (7 678) S OPT (7 678) W OPT (9 678) S OPT (7 678) S OPT (7 678) S OPT (7 678) S OPT (7 678) W OPT (9 678) S OPT (7 678) S OPT (7 678) S OPT (7 678) S OPT (7 678) W OPT (9 678)	1 0 1 1 1 2 1 3 1 2 0 2 1 2 2 2 3 2 3 0 3 1 3 2 3 3 3	p. 56
High output limits	S OUH (7 684) W OUH (9 684) S OUH (7 684) W OUH (9 684) S OUH (7 684) W OUH (9 684)	1 (number) # 1 2 (number) # 2 3 (number) # 3	p. 57

FUNCTION	KEY COMMAND	USER INPUT	REFERENCE
Low output limits	S OUL (7 685) W OUL (9 685) S OUL (7 685) W OUL (9 685) S OUL (7 685) W OUL (9 685)	1 (number) # 1 2 (number) # 2 3 (number) # 3	p. 58
Output state	S OUT (7 688) S OUT (7 688) W OUT (9 688) S OUT (7 688) S OUT (7 688) W OUT (9 688) S OUT (7 688) S OUT (7 688) W OUT (9 688)	1 0 1 1 1 2 0 2 1 2 3 0 3 1 3	p. 32
Password	S PAS (7 727) W PAS (9 727)	4 numbers	p. 34
Phone numbers	S PHO (7 746) W PHO (9 746) S PHO (7 746) W PHO (9 746) S PHO (7 746) W PHO (9 746) S PHO (7 746) W PHO (9 746) S PHO (7 746) W PHO (9 746)	1 (number) 1 2 (number) 2 3 (number) 3 4 (number) 4 5 (number) 5	p. 22
Recognition time	S REC (7 732) S REC (7 732) W REC (9 732) S REC (7 732) S REC (7 732) W REC (9 732) S REC (7 732) S REC (7 732) W REC (9 732) S REC (7 732) S REC (7 732) W REC (9 732)	1 0 (number) # 1 1 (number) # 1 2 0 (number) # 2 1 (number) # 2 3 0 (number) # 3 1 (number) # 3 4 0 (number) # 4 1 (number) # 4	p. 49
Redial time	S RED (7 733) W RED (9 733)	(number) #	p. 51
Reset EEPROM	S RES (7 737)	#	p. 39
Rings until answer	S RNG (7 764) W RNG (9 764)	(number) #	p. 24

FUNCTION	KEY COMMAND	USER INPUT	REFERENCE
CM101 relay status	W RST (9 778)		p. 33
Setback differential	S SBD (7 723) W SBD (9 732)	(number) #	p. 65
Setback time	S SBT (7 728) W SBT (9 728)	(no.) S (no) #	p. 63
Dial-out selections	S SEL (7 736) W SEL (9 736)	1 0 or 1 (8 times) 1	p. 46
	S SEL (7 736) W SEL (9 736)	2 0 or 1 (8 times) 2	
	S SEL (7 736) W SEL (9 736)	3 0 or 1 (8 times) 3	
	S SEL (7 736) W SEL (9 736)	4 0 or 1 (8 times) 4	
	S SEL (7 736) W SEL (9 736)	5 0 or 1 (8 times) 5	
Status report	W STA (9 782)		p. 37
TAD	S TAD (7 823) W TAD (9 823)		p. 25
Integrity test	S TES (7 837) W TES (9 837)		p. 52
Time	S TIM (7 846) W TIM (9 846)	(hr.) # (min.) # (sec.) #	p. 27
Dial-out method	S TON (7 866) S TON (7 866) W TON (9 866)	0 1	p. 45
Version number	W VER (9 837)		p. 35
Voice/data message	S VOI (7 864) S VOI (7 864) W VOI (9 864)	1 0 1 1 1	p. 48
	S VOI (7 864) S VOI (7 864) W VOI (9 864)	2 0 2 1 2	
	S VOI (7 864) S VOI (7 864) W VOI (9 864)	3 0 3 1 3	

FUNCTION	KEY COMMAND	USER INPUT	REFERENCE
Output wiring	S WIR (7 947)	1 0	p. 60
	S WIR (7 947)	1 1	
	W WIR (9 947)	1	
	S WIR (7 947)	2 0	
	S WIR (7 947)	2 1	
	W WIR (9 947)	2	
	S WIR (7 947)	3 0	
	S WIR (7 947)	3 1	
	W WIR (9 947)	3	

APPENDIX C: ACCESSORIES

The sensors listed are the most commonly used input devices. However, there is a virtually unlimited variety of sensor/switch input devices available at commercial or industrial electrical supply houses. They can provide a device to monitor virtually any condition that might be required for your business, industrial or residential needs. Contact Phonetics at (215) 558-2700 for more information.

MODEL NUMBER	SENSOR/SWITCH
FGD-0004	Water Detection Sensor
FGD-0005	Remote Temperature Sensor
FGD-0006	Magnetic Reed Switch
FGD-0012	1 relay output controller
FGD-0032	3 relay control module
FGD-0015	AC Output Module
FGD-0016	DC Output Module
FGD-0017	DC Input Module
FGD-0018	AC Input Module
FGD-0021	4 Module Rack
FGD-0022	Temp Alert

APPENDIX D: POSSIBLE APPLICATIONS

These are some of the applications for the 3300 that our customers and our engineers have developed.

THERMOSTATIC CONTROL

One application that is heavily utilized is using the 3300 in place of a thermostat to provide additional access and control capabilities. Basically, the application involves using a temperature sensor connected to Analog 2. Setpoints are programmed into the 3300 (the output high and low limits). These setpoints are used to control relays attached to Outputs 2 and 3. The relays directly switch a heater and a fan.

The analog high and low limits for the temperature are independent and are set higher and lower than the output limits. That way, if the temperature cannot be corrected by the heater or the fan, it will reach the alarm limit and the 3300 will call out with an alert. In this case, the 3300 can be remotely set for manual control for manual adjustment of the output.

INDUSTRIAL TANK LEVEL MONITORING

The 3300 is currently being used to monitor liquified gas tank levels. This application provides a phone call to a dispatch whenever the tanks need to be refilled. Also, the alert inputs can be used for fault detection purity level sensors, or other conditions. This application can also make use of the data logger to take minutely, hourly, daily, etc. readings of the tank conditions.

INACTIVITY MONITOR

The 3300 can monitor an area for human activity and dial-out with an alert message if activity is <u>not</u> detected. This application can be used to monitor people who work with dangerous materials. If the people are incapacitated due to injury or accident, the 3300 can summon help.

A passive infrared sensor is attached to an alert input. Program the alert normality to be the reverse of how the sensor normally monitors (eg. if it is *normally open* when it detects motion, set it to be *normally closed*). Set the recognition time to the amount of desired "inactivity time." Remember that a passive infrared sensor is designed to detect a moving body. A worker sitting at a desk may not move enough to be sensed.

The above applications are just of few of the ways the 3300 is being used. There are a large, diverse number of applications for the 3300. If you have an application or an idea you wish to discuss, feel free to call a Phonetics engineer at (215) 558-2700

APPENDIX E: DEFAULT COMMAND VALUES

Below is a list of all voice and data mode commands with their default values. The default value is the value the parameter will have if you do not program it.

COMMAND	DEFAULT
ACK	(N.A.)
ACT	All OFF
ALT	All normally open
ANH	1 = 100%, 2 = + 150° F
ANL	1 = 0%. 2 = - 20° F
ARM	30 seconds
** CA1	0
** CA2	0
CAN	All YES
CAR	8 seconds
** COM	OFF
DAM	10
DAT	1/1/90
ENP	NO
** EXI	(N.A.)
* HLP	(N.A.)
HIS	No auto or event logging
IDN	(blank)
IST	(N.A.)
ITN	3
* LAB	Al 1, Al 2, Al 3, An 1, An 2, Out 1, Out 2, Out 3
* LOC	16 spaces
* MEM	(N.A.)
OPT	All NONE
OUH	1 = 100%, 2 = + 150° F
OUL	1 = 0%, 2 = - 20° F
OUT	All OFF
PAS	Voice = 0000, Data = [CR]
PHO	(All blank)
* QUI	(N.A.)
REC	Alerts = 300 msec, Power = 5 min
RED	8 minutes
RNG	1
RST	(N.A.)

** data mode only*
*** voice mode only*

COMMAND	DEFAULT
SBD	0
SBT	Morning = 8 AM, Evening = 5 PM
SEL	All YES
STA	(N.A.)
TAD	OFF
TES	(N.A.)
TIM	00:00:00
TON	NO
* UNN	000000
** VER	(N.A.)
VOI	All YES
WIR	All normally open

** data mode only*
*** voice mode only*

APPENDIX F: ERROR MESSAGES

There are four possible error messages that the 3300 will give you if you make a detectable error in programming and interrogation.

NUMBER LIMIT	Too many digits entered for that particular memory location. Occurs while programming.
ENTRY ERROR	Keys pressed in wrong order. Occurs while programming.
NO NUMBER	Nothing programmed in memory location for a particular phone number. Occurs during interrogation.
INVALID	Incorrect password entered, or tried to acknowledge an alarm when none existed.

DATA MODE

There are two error messages you can receive while in data mode.

?INPUT ERROR?	A command is entered incorrectly, too many digits entered for a particular memory location.
INVALID	Incorrect password entered.

The 3300 cannot detect all errors, especially ones dependent on your programming. For example, it has no way of knowing whether you have programmed the correct telephone numbers. Work carefully and check each entry.

APPENDIX G: BATTERY LIFE

Battery life is affected by the following conditions:

TEMPERATURE	-Try to operate the 3300 in an environment of +40° F to +100° F. This will insure optimum battery performance.
	-The batteries may have shorter life span under reduced temperatures.
UTILIZATION	-When the electricity is OFF, the number of Alert calls that the 3300 makes will affect the battery life. Therefore, the battery life will vary for different installations.

Another way to conserve battery life is to have the 3300 only dial-out to phone numbers that will normally be answered by a person who is able to take effective action when an Alert occurs.

If the battery needs servicing or replacement, work may only be performed by qualified service personnel.

APPENDIX H: COMMON PROBLEMS

PROBLEM 1 The 3300 is not responding to touch-tone commands.

SOLUTION When you press the touch-tone keys, do not hold them down for a long period. The 3300 responds best when the touch-tone keys are pressed quickly. Try experimenting with the amount of time the key is held down to see if you get a response.
Some telephones have preassigned functions for * and #. This will conflict with entering data.

PROBLEM 2 The computer will not connect to the 3300.

SOLUTION Some modems require longer carrier wait times than others. The default carrier wait time is 8 seconds. Try lengthening the carrier wait time to 10 or 12 seconds.

PROBLEM 3 The 3300 will not dial out.

SOLUTION Some telephone systems will not accept touch-tone dialing. Change the 3300's dialing mode to pulse dialling. Almost all telephone systems will accept pulse dialing, because it is more reliable than touch-tone.

APPENDIX I: RETURNING 3300 UNITS FOR SERVICE

In the event that your 3300 does not function properly and you cannot reprogram it, we suggest that you do the following:

1) Refer to Appendix H, **COMMON PROBLEMS.**

2) Carefully write down your observations of the 3300's malfunctioning.

3) Call Phonetics' Customer Service at (215) 558-2700 if any instructions are not clear or if you have any questions.

If the unit must be sent to us for servicing, do the following:

1) Unplug the AC power supply from the wall outlet, remove the batteries, and disconnect all sensors from the alert inputs.

2) Carefully pack unit into its original container or a sturdy shipping box. Be certain to use sufficient cushioning material to avoid damage in transit.

3) Address package to:

   SERVICE DEPARTMENT
   PHONETICS, INC.
   901 TRYENS ROAD
   ASTON, PA 19014

4) Ship prepaid and insured via UPS or US Mail to ensure a traceable shipment with recourse for damage or replacement.

5) To avoid processing delays, be sure to include the following:

   a) Your name, address, and phone number
   b) Model and Serial numbers
   c) A letter explaining the 3300's problem

1 YEAR LIMITED WARRANTY

1. **WARRANTOR:** Dealer, Distributor, Manufacturer

2. **ELEMENTS OF WARRANTY:** This Product is warranted to be free from defects in materials and craftsmanship with only the limitations and exclusions set out below.

3. **WARRANTY AND REMEDY:**

   One-Year Warranty -- In the event that the Product does not conform to this warranty at any time during the time of one year from original purchase, warrantor will repair the defect and return it to you at no charge

   This warranty shall terminate and be of no further effect at the time the Product is (1) damaged by extraneous cause such as fire, water, lightning, etc. or not maintained as reasonable and necessary; (2) modified; (3) improperly installed; (4) repaired by someone other than warrantor; (5) used in a manner or purpose for which the Product was not intended; or (6) sold by original purchaser.

   WARRANTORS' OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT. THIS WARRANTY DOES NOT COVER PAYMENT OR PROVIDE FOR THE REIMBURSEMENT OF PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.

   It must be clear that the warrantors are not insuring your premises or guaranteeing that there will not be damage to your person or property if you use this Product. The warrantors shall not be liable under any circumstances for damage to your person or property or some other person or that person's property by reason of the sale of this product or its failure to operate in the manner in which it is designed. The warrantors' liability, if any, shall be limited to the original cost of the Product. The warrantors assume no liability for installation of the Product and/or interruptions of the service due to strikes, riots, floods, fire, and/or any cause beyond Seller's control.

4. **PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY:** In the event that the Product does not conform to this warranty, the Product should be shipped or delivered freight prepaid to a warrantor with evidence of original purchase.

5. **LEGAL REMEDIES:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state to the extent allowed by law expressly in lieu or any other express or implied warranty, condition, or guarantee.

Effective date 7/01/90

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