

# **OMA-P4100**

**Monitoring and Control System  
for Environmental and Operating Conditions**

**VERSION 2.00**

## **Operator's Manual**



## WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that our customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. Our Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

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1. Returnee's name, address, and phone number.
2. Model and Serial numbers.
3. Repair instructions.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. That way our customers get the latest in technology and engineering.

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# INTRODUCTION

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## OMA-P4100 CAPABILITIES

The OMA-P4100 is an electronic watchman. It monitors specific environmental and operating conditions at your business facility or remote property. The OMA-P4100 is equipped with sensors that automatically monitor the following conditions:

- ♦ AC electrical power--checks for power failure and records the total amount of time the power was off.
- ♦ Temperature--monitors temperature between -20° F and +150° F, checks to see if it exceeds or falls below user-programmed high and low limits, states actual temperature.
- ♦ High sound levels--such as smoke or burglar alarms.
- ♦ Battery--the condition of its battery back-up.

The OMA-P4100 also has three digital alert inputs. Attachable dry contact sensors (see Appendix C) monitor conditions at the unit's location or other areas, such as:

- ♦ Intrusion into premises
- ♦ Water leaks or floods
- ♦ Temperature in remote areas

The use of each alert input can vary widely. One example is as follows:

- ♦ Input 1--Passive infrared sensor to detect intrusion
- ♦ Input 2--Water sensor for water seepage in a basement
- ♦ Input 3--Magnetic reed switch for a door.

The P4100 also has an auxiliary temperature terminal. An auxiliary temperature probe can be attached to this terminal to monitor temperature in a second location. This second temperature will not

cause a dial-out, but will appear in call-in and alarm status reports. Also, the auxiliary temperature terminal can be used as a fourth alert input, but only if you are not using a second temperature probe. This fourth alert input terminal will function exactly like the other three alert input terminals.

The P4100 also gives you the ability to selectively disable the alert inputs, plus the high temperature, low temperature, high sound, and power failure monitors. When the monitor is disabled, the P4100 will not dial-out with an alarm.

There is an output terminal on the P4100. You can wire a relay (OMA-PX24; see Appendix C) to the output terminal, then wire an alarm horn or light to the relay. Whenever an alarm condition occurs, the alarm horn/light will be activated.

All monitoring is a continuous process. When a problem arises, the unit will announce the alarm message locally for 30 seconds. It will then activate the output device (if connected) and sequentially dial up to four user-programmed telephone numbers with an alarm message. It will state the existing problem, disconnect from the telephone line, then wait for an acknowledging telephone call. The OMA-P4100 will continue dialing-out until its message is properly acknowledged.

You can also call-in to the OMA-P4100 to get a status report on the monitored conditions and listen-in through the provided microphone.

The OMA-P4100 has a programmable keyboard security code, which adds a measure of protection to the settings. When the security code is entered, the keyboard is locked. No one can change the user-programmed data or turn off the unit without knowing the code to unlock the keyboard.

The P4100 has non-volatile memory. When AC power and the battery back-up fail, the unit will still retain all of its programmed parameters, except for time, the security code, and the power-off time accumulator.

## **THE OMA-P4100 OWNERS' MANUAL**

This manual describes the features and operation of the OMA-P4100. It provides explanations, illustrations, and examples to simplify its installation and programming.

**Read this manual over at least once and experiment with the examples before starting your actual programming.**

## **THE OMA-P4100 SPECIFICATIONS AND STATISTICS**

### **SIZE**

10 $\frac{1}{4}$  inches high, 10 $\frac{3}{8}$  inches wide, 4 $\frac{1}{8}$  inches deep.

### **WEIGHT**

10 pounds, 6 ounces (with battery).

### **BATTERY SYSTEM**

One 1.9 Amp-hour gelled electrolyte battery (included), with constant trickle recharger.

Battery back-up is approximately 9 hours with AC power off. The battery will automatically re-charge when the AC power is restored, but it will take 48 hours for a full charge. Pressing OFF disconnects all functions, but the battery will still be discharged if AC power is removed.

### **AC CONNECTION**

UL-listed Class 2 wall transformer with a six-foot cord. Converts 110 VAC, 60 Hz, 8 Watt input to 12 VAC, 60 Hz, 500 mA output.

### **TELEPHONE CONNECTION**

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

### **OPERATING CONDITIONS**

The OMA-P4100 should not be operated in temperatures less than +40° F nor more than +100° F.

Do not use the OMA-P4100 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 OMA-P4100 may be affected by power surges through the telephone line or the 110 VAC power supply. Though the P4100 has built-in surge protection, we recommend that you obtain additional protection for the P4100, and 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.

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## **IMPORTANT!**

The OMA-P4100 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.

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### **FCC REQUIREMENTS**

The OMA-P4100 complies with Part 68 of the FCC Rules. Inside the unit's door 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 OMA-P4100 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 OMA-P4100 should not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

If you program your OMA-P4100 to dial-out to a municipal service group (e.g. police or fire departments), the following must be done when the number is dialed during tests:

- 1) Remain on-line and briefly explain to the dispatcher the reason for the call.
- 2) Perform the test during off-peak hours, such as early morning or late evening.



If trouble is experienced, disconnect the OMA-P4100 from the telephone line to determine if the unit is causing the malfunction. If the OMA-P4100 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 Appendices F, **MAINTENANCE**, and G, **TROUBLESHOOTING**.
- 2) Carefully write down your observations of the P4100's malfunctioning.
- 3) Call OMEGA's Customer Service at 1-800-622-2378 (1-800-622-BEST) if any instructions are not clear or if you have any questions.

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## CHAPTER 1

# INSTALLATION

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### MOUNTING THE OMA-P4100

The OMA-P4100 is designed to mount on a wall using four screws or bolts. The mounting holes are in the back panel of the unit and are accessible when the door is open (See Figure 1).

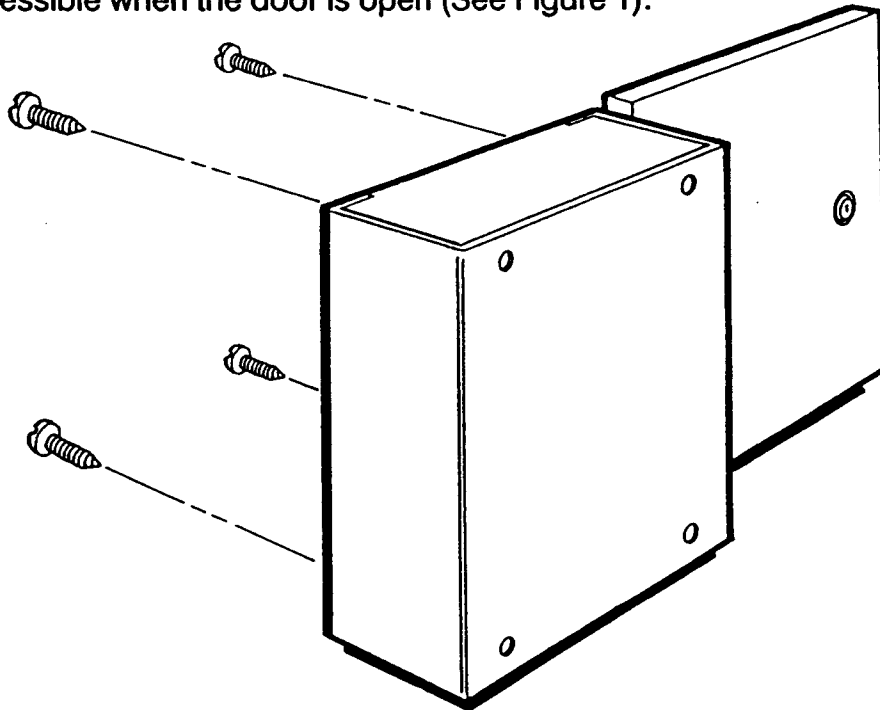


FIGURE 1: MOUNTING THE OMA-P4100

### POWER SUPPLY INSTALLATION AND TELEPHONE CONNECTION

After mounting the unit on a wall, plug the provided AC transformer into any standard 110 VAC outlet (see Figure 2).

Next, plug the provided modular telephone jack into any standard modular telephone outlet (RJ11W for wall-mounted phones, RJ11C for other phones). If you do not have a modular telephone extension at the OMA-P4100's location, contact your local telephone company to have one installed (there is a nominal charge for this service). If you have four-pin jacks, adapters are readily available to convert them to the

modular plugs. Contact your local telephone company or electronics parts store.

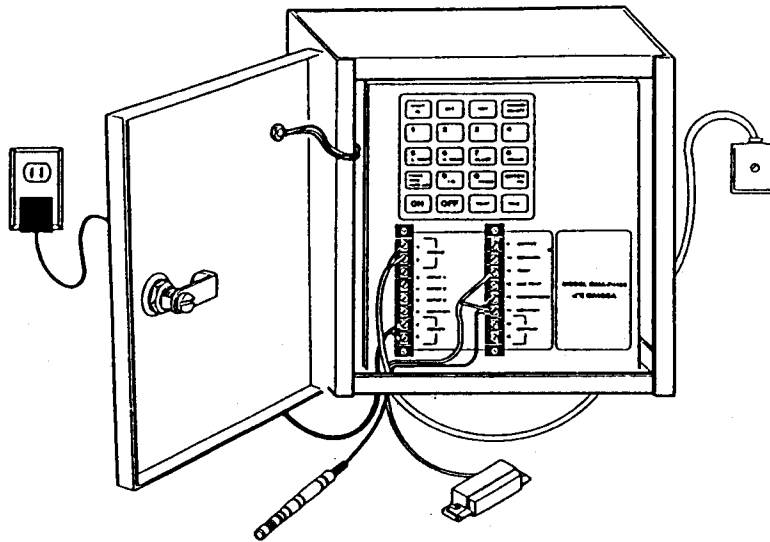


FIGURE 2: PLUGGING IN THE AC TRANSFORMER AND THE TELEPHONE JACK

You should use power surge suppression devices on both the 110 VAC power supply and the telephone line. Please refer to page 3 of the INTRODUCTION for further information.

---

## IMPORTANT!

The OMA-P4100 will operate with all standard telephone systems that accept pulse or tone dialing.

Certain private telephone systems and public switching equipment may not accept pulse and/or tone dialing, or may generate an unacceptable ring signal. In those cases, a dedicated line may be required for the P4100. Consult the supplier of your telephone system if you encounter problems.

The OMA-P4100 cannot be used on an extension line to dial its own telephone number. Also, it may not be installed on a party line or pay telephone line.

---

## THE PERMANENT BATTERY

The OMA-P4100 is equipped with a permanent 1.9 Amp-hour gelled electrolyte battery with a constant trickle recharger. The battery is recharged whenever the AC transformer is plugged into an outlet.

A complete recharge will take approximately 48 hours. During that interval, a status report may give the "Battery condition low" alarm message.

## THE BATTERY CONNECTION

Find the metal jumper that is attached to terminal 16 (marked **BATTERY**; see Figure 3) and the screw directly below it. Remove the jumper and attach it to **BOTH BATTERY** screws (terminals 15 and 16). This will connect the rechargeable battery to the P4100.

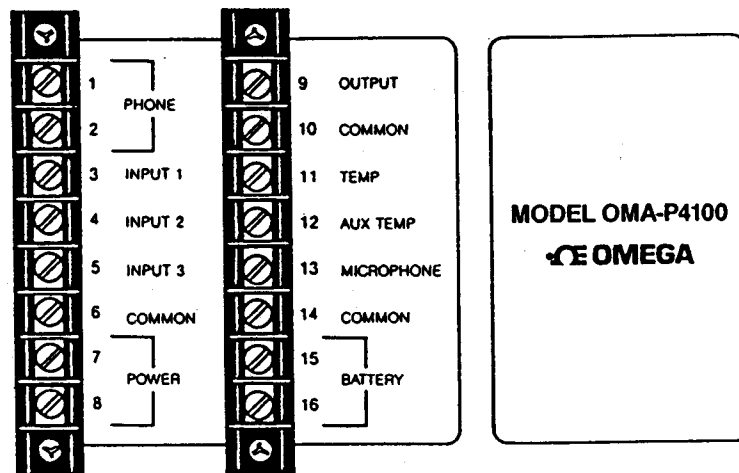


FIGURE 3: TERMINAL STRIPS

To disconnect the permanent battery, just reattach the jumper to the terminal 16 and the screw directly below it. We strongly recommend that the battery stay connected, except when the unit is going to be shipped or stored.

## THE TEMPERATURE PROBE

The OMA-P4100 provides a temperature probe. It is used to monitor the temperature. The P4100 will check to see if it exceeds user-

programmed high and low limits. The temperature is also given in a status report.

## THE ALERT INPUTS

If you are not going to use the alert inputs, skip to Chapter 2, **KEYBOARD OPERATIONS** on page 13.

The OMA-P4100 has three digital alert input terminals (see Figure 3). They are designated Inputs 1, 2, and 3.

An alert input can be used with any *normally open* (N.O.) or *normally closed* (N.C.) *dry contact* device. *Open* is when there is no contact and *closed* is when a contact exists. The unit will adapt to N.O. or N.C. sensors when the unit's I.D. number is programmed (see Chapter 2, page 28).

## CONNECTING A SENSOR TO AN ALERT TERMINAL

Each input consists of one screw, marked "INPUT (1, 2, or 3)." To the right of the screw is a small number that designates the terminal number. For example, Input 1 is terminal 3. You must determine which sensor will be connected to each specific alert input. For types, refer to Appendix C.

Two wire leads are used to connect any monitoring sensor. Fasten one lead to the *common* and the other lead to the *input terminal*. Tighten both screws.

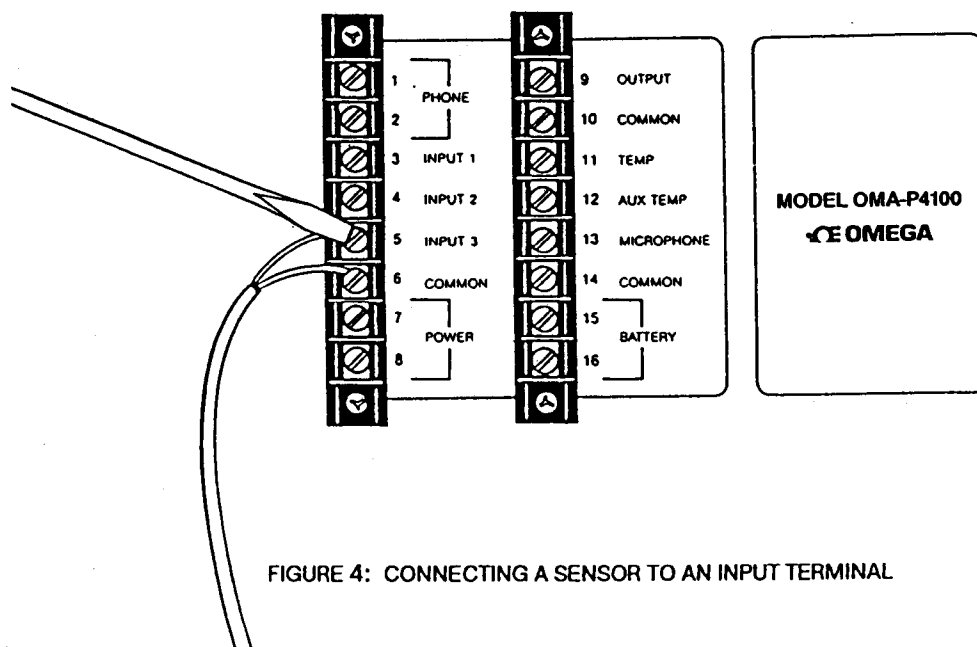


FIGURE 4: CONNECTING A SENSOR TO AN INPUT TERMINAL

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## NOTE:

Do not use sensors, switches, or relays that supply voltage or current to the OMA-P4100.

Any N.O. or N.C. sensor can be attached to the OMA-P4100 using 22 gauge wire. The sensor can be up to 1500' from the unit. The total resistance of the circuit cannot be greater than 50 ohms.

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### MULTIPLE SENSORS ON AN ALERT INPUT

The OMA-P4100 may have multiple sensors connected to one terminal as long as the *normal* condition of the sensors is (either) N.O. or N.C.

#### *MULTIPLE NORMALLY CLOSED SENSORS*

To connect multiple *normally closed* sensors to one input, wire them in series. Fasten a lead from the first sensor to *common*. Connect the other lead from the first sensor to one lead from the next sensor. Continue wiring sensors end-to-end until you have wired all of your sensors. Wire the second lead from your last sensor to the input screw. Refer to Figure 5.

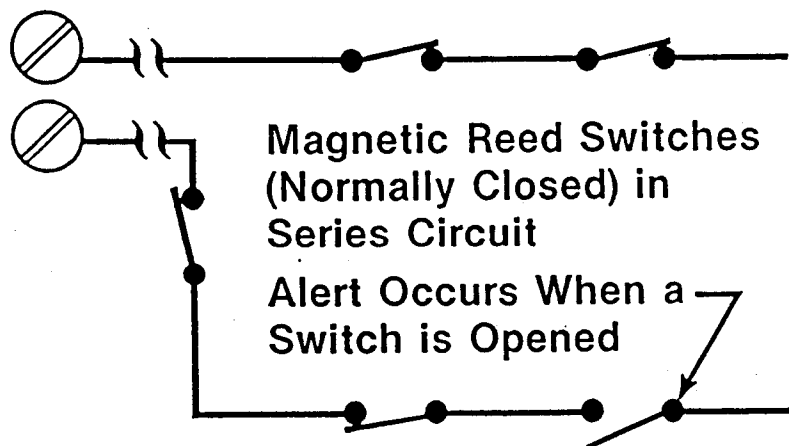


FIGURE 5: CONNECTING MULTIPLE N.C. SENSORS TO ONE INPUT TERMINAL

Multiple N.C. inputs are typically magnetic reed switches to monitor the security of windows and doors.

#### *MULTIPLE NORMALLY OPEN SENSORS*

To connect several *normally open* sensors to one input, wire them in *parallel*. Fasten one lead from each sensor to a *common*. Wire the second lead from each sensor to the corresponding *input terminal* (see Figure 6).

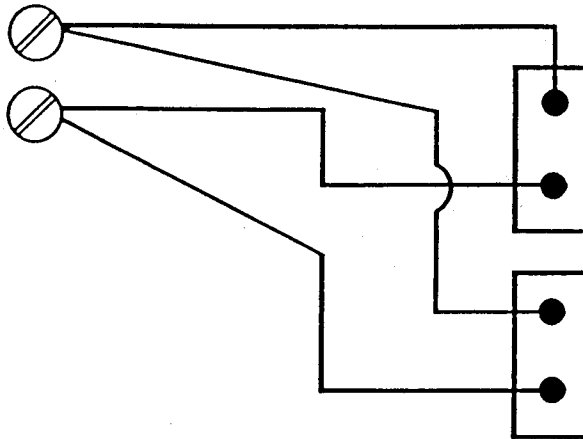


FIGURE 6: CONNECTING MULTIPLE N.O. SENSORS TO ONE INPUT TERMINAL

Multiple N.O. inputs are typically temperature switches to monitor the temperature in several different locations simultaneously.

#### AUXILIARY TEMPERATURE/ALERT 4 TERMINAL

The auxiliary temperature terminal is a dual purpose terminal. It can function as either a status-only temperature input or a fourth dry contact input. The auxiliary temperature/alert sensor is connected to terminals 12 and 14, which are marked **AUX TEMP** and *common*, respectively.

To wire the auxiliary temperature probe (OMA-PX05), fasten one lead of the temperature probe to the **AUX TEMP** screw and the other lead to *common*. The auxiliary temperature is only used in a status report and it will not cause an alarm dial-out. If you use the terminal with an auxiliary temperature sensor, you cannot attach a dry contact sensor.

The terminal can be used as a fourth alert input terminal with a N.O. or N.C. dry contact sensor. If the status of the sensor changes, the unit will dial-out with the message "Alert condition four exists." To attach a dry contact sensor, follow the instructions in the previous sections. If you use the terminal with a fourth dry contact sensor, you cannot attach a temperature probe.

## **THE OUTPUT TERMINAL**

The P4100's output is a TTL, low current signal. It can sink a maximum of 10 mA and source a maximum of 1 mA. When the P4100 starts to dial-out with an alarm message, it activates an output device. The output will deactivate when the unit hangs up the phone.

The output terminal requires a relay to control devices such as a horn or a light. We recommend that you use OMEGA's Output Controller (OMA-PX24), which was designed specifically for the P4100. Contact OMEGA's Sales Department at 1-800-82-66342 (1-800-TC-OMEGA) for details.



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## CHAPTER 2

# KEYBOARD OPERATIONS

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The OMA-P4100 stores the following important programmable information in its memory.

- ♦ Time
- ♦ Four telephone numbers automatically called in emergencies
- ♦ Tone or pulse dialing
- ♦ High and low temperature alarm limits
- ♦ Disabling the high and/or low temperature alarms
- ♦ Number of rings before the OMA-P4100 answers the telephone to give a status report
- ♦ Length of the listen-in time
- ♦ Disabling the high sound alarm
- ♦ AC power failure recognition time
- ♦ Disabling the power failure alarm
- ♦ Disabling the alert inputs
- ♦ Keyboard lock
- ♦ The I.D. number
- ♦ Silencing the local speaker during dial-out and call-in

Set these parameters using the keyboard on the front of your OMA-P4100 (see Figure 10).

The keys on the OMA-P4100 are mentioned often in this chapter. In text, they will always be symbolized by **BOLDFACED, CAPITALIZED** letters. The sentence "Press **SET**, then **SOUND**" is read as "Press the key with the word **SET** on it, then press the key with the word **SOUND** on it."

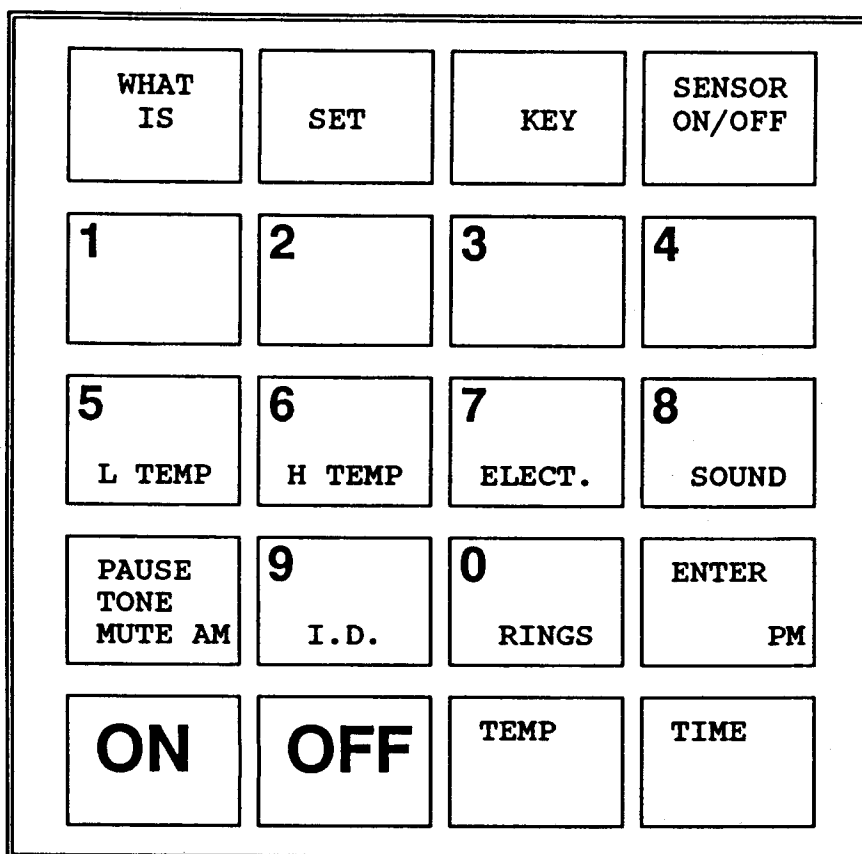
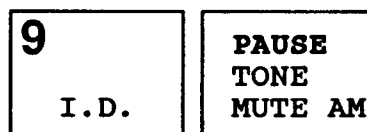


FIGURE 7: THE OMA-P4100 KEYBOARD

Several of the keys are multifunctional. In programming instructions, only the word for the specific parameter being programmed will be used. For example, the sentence "Press 9, then **PAUSE.**" is read as "Press the key with 9/I.D. on it, then press the key with **PAUSE/TONE/MUTE/AM** on it." The specific parameter will also be **boldfaced** in the illustration. For example, "Press 9, then **PAUSE.**" would be shown as follows:



Every time a key is pressed to begin programming or interrogation, the unit will beep. As data is being entered, the P4100 will repeat the number of the key pressed.

To begin programming your unit, make sure that the unit is installed and **ON**.

## THE TIME

The OMA-P4100 has a built-in clock. When you first power-up the unit, the time will be 12 AM. It will start to keep time from 12 AM, until you program the current time. Then the clock keeps time from the new time. If the AC fails, the clock will continue to keep time until the battery back-up fails. When both the power and the battery back-up fail, the clock will reset to 12 AM. An incorrect time is a good indication that the power had failed.

### SETTING THE TIME

To set the time, press **SET**, followed by **TIME**. Enter the numbers for the correct time. If the time is AM, press **AM**, then **ENTER**. If the time is PM, just press **ENTER**.

For example, to set the time to be 8:45 AM, press the following keys:

SET	TIME	8	4	5
		SOUND		L TEMP
PAUSE TONE MUTE AM	ENTER PM			

To set the time to be 2:00 PM, press the following keys:

SET	TIME	2	0	0
			RINGS	RINGS
ENTER PM				

### CHECKING THE TIME

To check the time, press **WHAT IS**, then **TIME**. The unit will say "The time is (number, AM or PM)."

WHAT IS	TIME
------------	------

Referring to the two previous examples, the unit should respond with "The time is 8:45 AM" and "The time is 2:00 PM," respectively.

## **THE TELEPHONE NUMBERS**

The OMA-P4100 has the capability to store up to four, 32-digit (or smaller) telephone numbers in its memory. These telephone numbers are the alarm dial-out telephone numbers. They are known as Phones 1, 2, 3, and 4. The telephone numbers are programmed in the sequence in which you want to have them called. Therefore, the number to be called first would be Phone 1, the number to be called second would be Phone 2, et cetera. You can also program the P4100 to dial the Phone numbers using pulse (rotary) or tone dialing.

---

## **I M P O R T A N T !**

Instruct key people at each telephone number about the OMA-P4100 and about what actions they should take if called with an alarm. If necessary, instruct switchboard operators to handle alarm and Acknowledgement calls. Do not have the alarm call answered by a person who is unable to acknowledge the alarm or to take prompt, effective action to deal with the situation. If appropriate, conduct periodic drills to familiarize personnel with the operation of the unit.

In some areas, municipal services (i.e. police, fire, medical) will not respond to automatic voice messages. Check with your local municipal services.

---

## **SETTING A DIAL-OUT TELEPHONE NUMBER**

The P4100 can dial out using pulse dialing or touch-tones. It will normally dial-out with pulse, but can be switched to touch-tones by inserting **TONE** as the first digit of the telephone number. The **PAUSE/TONE/MUTE/AM** key will only indicate tone dialing when it is the first key of a telephone number. If **PAUSE** is inserted in the middle of a telephone number, it produces a 4-second pause during dial-out.

To set a telephone number, press **SET**, then the Phone number (1, 2, 3, or 4). Press **TONE** if the number should be tone-dialed. Press the keys corresponding to the digits of the telephone number. Finally, press **ENTER**.

For example, to set Phone 1 as 1-215-555-8379, press **SET**, then 1. Press the keys corresponding to the digits of the telephone number. Finally, press **ENTER**.

SET	1	1	2	1
5 L TEMP	5 L TEMP	5 L TEMP	5 L TEMP	8 SOUND
3	7 ELECT.	9 I.D.	ENTER PM	

To set Phone 2 as 1-215-555-9387 and tone-dialed, press **SET**, **2**, then **TONE**. Press the keys corresponding to the digits of the telephone number. Finally, press **ENTER**.

SET	2	PAUSE TONE MUTE AM	1	2
1	5	5 L TEMP	5 L TEMP	5 L TEMP
9 I.D.	3	8 SOUND	7 ELECT.	ENTER PM

### USING PAUSE

With some telephone systems, you must first dial an access number to reach an outside line, then pause for the connection before dialing a regular telephone number. The OMA-P4100 also has this capability.

The 4-second pause can be programmed as part of the telephone number. To do so, press **SET**, and the Phone number (1, 2, 3, or 4) (for a tone-dialed number, then press **TONE**). Next, press the keys corresponding to the digit(s) of the access number, then press **PAUSE**. Now press the keys corresponding to the digits of the regular telephone number. Finally, press **ENTER**.

For example, to set Phone 3 so that the OMA-P4100 will tone-dial 9 to access an outside line, wait 4 seconds for the dial tone, then tone-dial 555-4523, press the following keys:

SET	3	PAUSE TONE MUTE AM	9 I.D.	PAUSE TONE MUTE AM
5 L TEMP	5 L TEMP	5 L TEMP	4	5 L TEMP
2	3	ENTER PM		

### DELETING A PHONE NUMBER

To delete a telephone number from memory, press **SET**, the Phone number, then **ENTER**.

For example, to delete Phone 3 from memory, press the following keys:

SET	3	ENTER PM
-----	---	-------------

### CHECKING A DIAL-OUT TELEPHONE NUMBER

To check a telephone number, press **WHAT IS**, then the Phone number you want to check. The OMA-P4100 will state the telephone number.

For example, to check Phone 1, press the following keys:

WHAT IS	1
------------	---

The unit will say "One, two, one, five, five, five, five, eight, three, seven, nine."

When you check a telephone number that is tone-dialed or has a programmed pause, the P4100 will beep where the **PAUSE/TONE** key was pressed. For example, to check Phone 2 in SETTING A DIAL-OUT TELEPHONE NUMBER, press **WHAT IS** then 2. The P4100 will beep, then say "One, two, one, five, five, five, five, nine, three, eight, seven." Another example is checking Phone 3 from USING PAUSE. Press

**WHAT IS**, then 3. The OMA-P4100 will beep, say "Nine," beep again, then say "One, two, one, five, five, five, five, four, five, two, three."

If there is no dial-out telephone number in the unit's memory, it will say "No number." For example, to check Phone 3 after it has been deleted, press **WHAT IS**, then 3. The OMA-P4100 will say "No number."

When you check a telephone number, you will also be told if the corresponding Alert input is disabled (see page 26). That is, when you press **WHAT IS**, then 1, the P4100 will say "Off" if Alert 1 is disabled, then state Phone 1. If Alert 1 is enabled, the P4100 will just state the Phone number.

## THE TEMPERATURE LIMITS AND ALARMS

The temperature limits are the high and low readings at the temperature probe which will cause the OMA-P4100 to automatically dial-out with an alarm message. The range of the temperature probe is -20° F to +150° F.

---

### HINT:

Do not set the limits too close to the normal room temperature. Minor changes in temperature would cause frequent and unnecessary alarm dial-outs.

---

## PROGRAMMING THE HIGH TEMPERATURE LIMIT

The high temperature limit is the high reading at the temperature probe that will cause a dial-out. The OMA-P4100's alarm message is "The temperature is high." Until you program in your own value, the unit has a high limit of +100° F.

To program the high temperature limit, press **SET**, then **H TEMP**. Press **PAUSE** if the limit is negative. Next, press the keys for temperature limit, then **ENTER**.

For example, to program the high temperature limit to be 94° F, sequentially press the following keys:

SET	6 H TEMP	9 I.D.	4	ENTER PM
-----	-------------	-----------	---	-------------

## THE HIGH TEMPERATURE ALARM

The high temperature alarm causes the OMA-P4100 to dial-out when the temperature exceeds the high temperature limit. It is automatically enabled when the unit is initially activated.

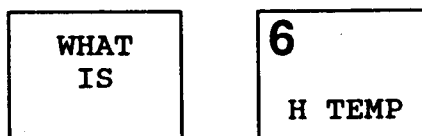
To disable the high temperature alarm, press **SENSOR ON/OFF** and **H TEMP**. The OMA-P4100 will say "Off."



To re-enable the high temperature alarm, press **SENSOR ON/OFF**, then **H TEMP**. The unit will say "On."

## CHECKING HIGH TEMPERATURE LIMIT AND ALARM STATUS

Check the programmed value of the high temperature limit and the status of the alarm by pressing **WHAT IS**, then **H TEMP**.



If the alarm has been disabled, the OMA-P4100 will say "Off," then state the programmed high temperature limit. If the alarm is enabled, the unit will just state the high temperature limit.

Referring to the example in PROGRAMMING THE HIGH TEMPERATURE LIMIT, the OMA-P4100 will say "Ninety-four degrees."

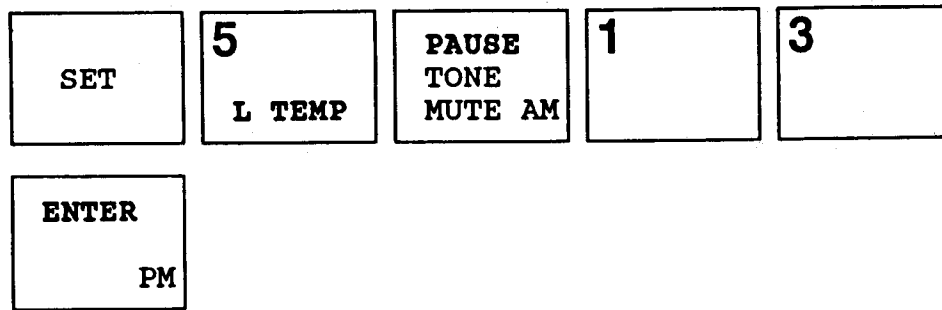
## PROGRAMMING LOW TEMPERATURE LIMIT

The low temperature limit is the low reading at the temperature probe that will cause a dial-out. The OMA-P4100's alarm message is "The temperature is low." Until you program in your own value, the unit has a low temperature limit of +10° F.

To program the low temperature limit, press **SET**, then **L TEMP**. Press **PAUSE** if the limit is negative. Next, sequentially press the keys for the temperature limit, then press **ENTER**.

For example, to set the low temperature limit to be -13° F, press the following keys:

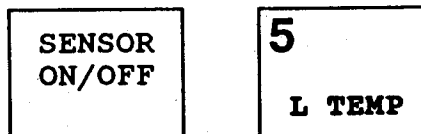




### LOW TEMPERATURE ALARM

The low temperature alarm causes the OMA-P4100 to dial-out when the temperature exceeds the low temperature limit. It is automatically enabled when the unit is initially activated.

To disable the low temperature alarm, press **SENSOR ON/OFF** and **L TEMP**. The OMA-P4100 will say "Off."



To re-enable the low temperature alarm, press **SENSOR ON/OFF**, then **L TEMP**. The unit will say "On."

### CHECKING LOW TEMPERATURE LIMIT AND ALARM STATUS

Check the programmed value of the low temperature limit and the status of the alarm by pressing **WHAT IS**, then **L TEMP**.

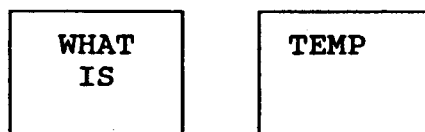


If the alarm is disabled, the OMA-P4100 will say "Off," then state the programmed low temperature limit. Otherwise, the unit will just state the low temperature limit.

For example, to check the low temperature limit programmed in PROGRAMMING THE LOW TEMPERATURE LIMIT, press **WHAT IS**, then **L TEMP**. The unit will say "Thirteen degrees below zero."

## OBTAINING A CURRENT TEMPERATURE REPORT

By pressing **WHAT IS**, then **TEMP**, you can find out the current temperature at the temperature probe's location. It is automatically updated by the OMA-P4100 as conditions change.



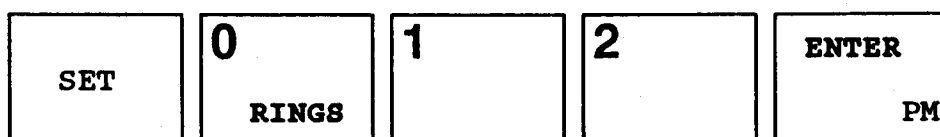
## THE RINGS UNTIL ANSWER AND TAD COMPATIBILITY

The *Rings Until Answer* are the number of rings that must occur before the OMA-P4100 will answer the telephone in response to a call-in. The number of rings can be from 1 to 199. Until you program your own value, the *Rings Until Answer* is set to 4.

### PROGRAMMING THE RINGS UNTIL ANSWER

To program this number, press **SET**, then **RINGS**. Press the key(s) corresponding to the number of rings desired, then press **ENTER**.

For example, to program the number of rings to be 12, press **SET**, then **RINGS**, 1, 2, then **ENTER**.



### TELEPHONE ANSWERING DEVICE COMPATIBILITY

The OMA-P4100 can be used on the same telephone line with a telephone answering device (TAD). TADs include modems, answering machines, et cetera. If the TAD responds to a call-in before the OMA-P4100, the unit will consequently answer any other incoming calls on the first ring for the next three minutes.

This function is automatically disabled when the unit is initially activated. It will not work properly unless the *Rings Until Answer* is higher than the number of rings until the TAD answers the telephone.

To enable this function, press **SENSOR ON/OFF**, then **RINGS**. The OMA-P4100 will say "On."

SENSOR  
ON/OFF

0  
RINGS

Repeat the process to disable the TAD function. The unit will say "Off."

### CHECKING RINGS UNTIL ANSWERED AND TAD COMPATIBILITY

To check the number of *Rings Until Answer*, press **WHAT IS**, then **RINGS**.

WHAT  
IS

0  
RINGS

If TAD is disabled, the OMA-P4100 will say "Off," then state the *Rings Until Answer*. If the TAD compatibility is enabled, the unit will just state the *Rings Until Answer*.

Referring to the example in PROGRAMMING THE RINGS UNTIL ANSWER, OMA-P4100 will say "Off. Twelve."

### **MONITORING SOUND**

The **SOUND** key has two functions. It is used to program the amount of time you can *listen-in* through the microphone probe. It is also used to disable the high sound alarm.

### THE LISTEN-IN TIME

*Listen-in time* is the amount of time you can listen to the activities at the microphone's location. The range is from 1 to 199 seconds. Until you set the *listen-in time*, it will be 10 seconds.

### **PROGRAMMING LISTEN-IN TIME**

Program the *listen-in time* by pressing **SET**, then **SOUND**. Next, sequentially press the keys corresponding to the number of seconds of *listen-in time*. Finally, press **ENTER**.

For example, to program the *listen-in time* to be 30 seconds, you would sequentially press the following keys:

SET	8 SOUND	3	0 RINGS	ENTER PM
-----	------------	---	------------	-------------

### THE HIGH SOUND ALARM

The high sound alarm causes the OMA-P4100 to dial-out when the current sound level suddenly exceeds the normal sound level. This increased sound level must exist for at least ten seconds. The alarm is automatically enabled when the unit is initially activated.

To disable this function, press **SENSOR ON/OFF**, then **SOUND**. The unit will say "Off."

SENSOR ON/OFF	8 SOUND
------------------	------------

To re-enable the high sound alarm, press **SENSOR ON/OFF**, then **SOUND**. The OMA-P4100 will say "On."

Disabling the high sound alarm will not affect the OMA-P4100's listen-in function.

### CHECKING LISTEN-IN TIME AND HIGH SOUND ALARM

To check the duration of *listen-in time* and the status of the high sound alarm, press **WHAT IS**, then **SOUND**.

WHAT IS	8 SOUND
------------	------------

If the alarm is disabled, the OMA-P4100 will say "Off," then state the *listen-in time*. If the alarm is enabled, the unit will just state the *listen-in time*.

Referring to the example in PROGRAMMING LISTEN-IN TIME, the OMA-P4100 will say "Thirty seconds."

### **AC POWER FAILURE**

The **ELECT.** key has two functions. It is used to program the amount of continuous time a power failure must exist before causing an alarm

dial-out. It is also used to change the on/off status of the power failure alarm.

### AC POWER FAILURE RECOGNITION TIME

The *recognition time* is the amount of continuous time (in seconds) that a power failure must exist before causing an alarm dial-out. It can be from 1 to 199 seconds. If you do not program a *recognition time*, the OMA-P4100 will automatically set it to be 100 seconds.

### PROGRAMMING THE RECOGNITION TIME

To program the *recognition time*, press **SET**, then **ELECT.** Sequentially press the keys corresponding to the number of continuous seconds an AC power failure should exist before a power failure dial-out. Finally, press **ENTER**.

For example, to set the *recognition time* to be 120 seconds, sequentially press the following keys:

<b>SET</b>	<b>7</b> ELECT.	<b>1</b>	<b>2</b>	<b>0</b> RINGS
<b>ENTER</b> PM				

### AC POWER FAILURE ALARM

The power failure alarm causes the OMA-P4100 to dial-out when the AC power fails for a user-programmed period of time (see AC POWER FAILURE RECOGNITION TIME). It is automatically enabled when the unit is initially activated.

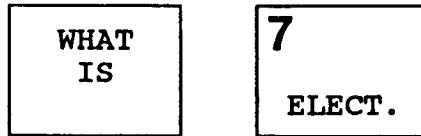
To disable the power failure alarm, press **SENSOR ON/OFF**, then **ELECT.** The unit will say "Off."

<b>SENSOR ON/OFF</b>	<b>7</b> ELECT.
--------------------------	--------------------

To re-enable the AC power failure alarm, press **SENSOR ON/OFF**, then **ELECT.** The OMA-P4100 will say "On."

## CHECKING RECOGNITION TIME AND ALARM STATUS

Check the *recognition time* and the power failure alarm status by pressing WHAT IS, then ELECT.



If the alarm is turned off, the OMA-P4100 will say "Off," then state the *recognition time*. If the alarm is turned on, the OMA-P4100 will just state the *recognition time*.

Referring to the example in PROGRAMMING THE RECOGNITION TIME, the unit will say "One hundred-twenty seconds."

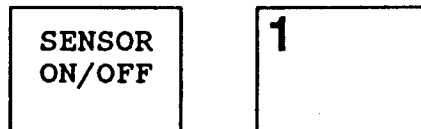
## POWER-OFF TIME ACCUMULATOR

Each time the AC power fails, the P4100 accumulates the time in its memory. It then will state the total amount of time the power has failed in its status report (see page 34). The off-time accumulator will add up the length of power failure for 255 minutes and 59 seconds. After that, the unit will reset to 0. If the AC power and the battery back-up fail, the accumulator will reset to 0. To manually reset the power-off time, press OFF, then ON.

## DISABLING/ENABLING THE ALERT INPUTS

An alert input alarm causes the OMA-P4100 to dial-out when the status of any of the four attached alert sensors changes for at least 200 milliseconds. It is automatically enabled when the unit is initially activated.

To disable an alert input alarm, press SENSOR ON/OFF, then the input number (1, 2, 3, or 4). The unit will say "Off." For example, to disable Alert 1, press the following keys:



The P4100 will say "Off."

To re-enable an alert input alarm, press SENSOR ON/OFF, then the input number (1, 2, 3, or 4). The OMA-P4100 will say "On."

Please note that if you disable Alert 4 when a temperature probe is attached to the terminal, the P4100 will still state the temperature in a status report.

When you check a telephone number, you will also be told if the corresponding Alert input is off. That is, when you press **WHAT IS**, then 1, the P4100 will say "Off" if Alert 1 is disabled, then state Phone 1. If Alert 1 is enabled, the P4100 will just state the Phone number.

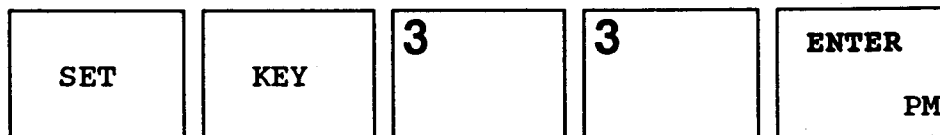
## **THE SECURITY CODE**

The OMA-P4100 has a programmable security code. It ensures that unauthorized personnel cannot readily tamper with the unit's programming or turn off the unit. The security code can be any number from 1 to 9999.

### **LOCKING THE KEYBOARD**

To set the security code, press **SET**, then **KEY**. The P4100 will say "Enter security code." Next, sequentially press the keys corresponding to the security code. Finally, press **ENTER**.

For example, to set the security code to be 33, press **SET**, **KEY**, 3, 3, then **ENTER**.



The keyboard will now be locked. Only someone who knows the security code will be able to unlock the keyboard. Anyone who tries to change any of the programming or tries to turn the unit off will receive the "Error" message.

---

## **IMPORTANT!**

Please note that unauthorized personnel are stopped from changing any of the OMA-P4100's programmable parameters. They are **not** stopped from using **WHAT IS** to find out any information. Additional protection may be necessary.

---

## UNLOCKING THE KEYBOARD

To unlock the keyboard, press **WHAT IS**, then **KEY**. The P4100 will say "Enter security code." Next, sequentially press the keys corresponding to the security code. Finally, press **ENTER**. The unit will say "Okay."

Continuing with the example above, you would unlock the keyboard by pressing the following keys:

WHAT IS	KEY	3	3	ENTER PM
------------	-----	---	---	-------------

The OMA-P4100 will say "Okay."

---

### **NOTE:**

If you enter the wrong security code, the unit will say "Error 2" after you press **ENTER**.

If you forget your security code, unplug the AC transformer and disconnect the battery. Next, reconnect the battery and plug the AC transformer back into the outlet. You will have to program a new security code and reprogram the time.

---

## **THE I.D. NUMBER**

The unit's I.D. number can be from 1 to 32 digits long. It is usually the telephone number where the unit is located. The I.D. number should be programmed after all sensors are wired to the P4100 in their normal state. This establishes the normal condition of the alert inputs in the OMA-P4100's memory.

## SETTING THE I.D. NUMBER

To set the I.D. number, press **SET**, then **I.D.**. Next, press the keys corresponding to the digits of the I.D. number. Finally, press **ENTER**. For example, to set the unit's I.D. number to be 215-555-4687, press the following keys:

SET	9 I.D.	2	1	5 L TEMP
-----	-----------	---	---	-------------



5 L TEMP	5 L TEMP	5 L TEMP	4	6 H TEMP
8 SOUND	7 ELECT.	ENTER		

### DELETING THE I.D. NUMBER

To delete the I.D. number from memory, press SET, I.D., then ENTER.

SET	9 I.D.	ENTER PM
-----	-----------	-------------

### CHECKING THE I.D. NUMBER

To check the identification number, press WHAT IS, then I.D.

WHAT IS	9 I.D.
------------	-----------

The unit will repeat its I.D. number, as well as give you a status report, which follows:

STATEMENT	COMMENT
Hello	
This is telephone number ____	(the I.D. number) NO NUMBER
The time is ____	(current time)
Alert condition ____	OKAY 1 EXISTS 2 EXISTS 3 EXISTS 4 EXISTS
The temperature is ____ degrees	(temp. at the probe)

STATEMENT	COMMENT
(temperature alarm condition)	OKAY THE TEMPERATURE IS HIGH THE TEMPERATURE IS LOW
Two*	
The temperature is _____ degrees*	(temp. at the auxiliary probe)
The electricity is _____	ON OFF
Power off time _____ minutes _____ seconds	(the total amount of time AC has failed)**
(back-up battery condition)	OKAY BATTERY CONDITION LOW REPLACE BATTERY
Sound level _____	OK HIGH
	NO NUMBER***

\* only if the optional second temperature probe is attached.

\*\* up to 255 minutes, 59 seconds

\*\*\* only if no dial-out telephone numbers programmed

Referring to the example in SETTING THE I.D. NUMBER, the OMA-P4100 would say "Hello. This is telephone number two, one, five, five, five, five, four, six, eight, seven," then give the rest of the status report.

If there is no I.D. number programmed, the unit will say "No number" after the phrase "This is telephone number."

#### MUTING THE P4100 DURING DIAL-OUT AND CALL-IN

The P4100 has a programmable mute as a security feature. The mute will only be in effect during dial-out and call-in; in other words, it will not affect programming the unit. The mute turns off the local speaker when the P4100 is dialing out with an alarm or accepting an incoming phone call.

To program the mute, press **MUTE** before you program the I.D. number. For example, to mute the speaker while programming the I.D. number to be 215-555-4687, press the following keys:

SET	9 I.D.	PAUSE TONE MUTE AM	2	1
5 L TEMP	5 L TEMP	5 L TEMP	5 L TEMP	4
6 H TEMP	8 SOUND	7 ELECT.	ENTER PM	

When you check the I.D. number, the P4100 will say "Hello. This is telephone number," beep to indicate that the mute is programmed, then continue on with the rest of the status report.

---

## HINT:

Sometimes, people need to use the OMA-P4100 to monitor doors and/or windows. They find that they cannot leave the P4100's location without tripping an alert condition. To leave the P4100's location, press **WHAT IS**, then **I.D.** The P4100 will begin giving the status report, which takes 30 seconds. During those 30 seconds, the P4100 will not sense any changes in the alert inputs, though it will still acknowledge high/low temperature and AC power failure. This gives you 30 seconds to leave the building without tripping an alert condition.

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## CHAPTER 3

### OPERATING FUNCTIONS

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#### ON AND OFF KEYS

The first two keys in the fourth row of the P4100's keyboard are **ON** and **OFF**. They are used to activate and deactivate the OMA-P4100.



**ON**

When you press **ON**, the red light on the door of P4100 will begin to glow. The unit will say "Hello" or beep if it is already on.

This state enables the OMA-P4100 to receive incoming calls and automatically dial-out in the event of the failure of a monitored condition. The red light will always glow while the OMA-P4100 is in the activation state.



**OFF**

When you press **OFF**, the OMA-P4100 will say "Have a good day." and the red light will stop glowing. All functions, except battery back-up, are disabled. The batteries will still recharge if the AC transformer is plugged into 110 VAC outlet.

It is recommended that you do not press **OFF** unless it is absolutely necessary. Full power is still consumed by the unit, though it cannot be programmed or interrogated. Also, the unit cannot dial-out with an alarm.

## MICROPHONE PROBE

The provided microphone probe is attached to the OMA-P4100 with a 25 foot wire cable. It has two important functions:

- ♦ It will continuously listen for a high sound level that increases 10 decibels over the normal sound level at a frequency of 1000 Hertz or more. If this sound level exists for 10 consecutive seconds or longer (such as a smoke alarm or burglar alarm), then the OMA-P4100 will dial-out with an alarm message.
- ♦ During an automatic dial-out, the microphone allows four 4-second intervals to *listen-in* to the OMA-P4100's location.
- ♦ During a call-in, the microphone allows a *listen-in* for a user-programmed interval from 1 to 199 seconds.

The location of the audible alarm in relation to the microphone is extremely important. Normally, the P4100 and the audible alarm must be in the same room. The maximum distance can vary considerably depending on the alarm, the acoustics, and the size of the room.

## ALARM CHECK

After the microphone probe and the alarm have been positioned, activate the alarm for 10 seconds. The unit should say "Sound level high" and start its dial-out procedure. Stop the alarm dial-out by pressing any key.

If the OMA-P4100 fails to respond, the microphone probe and the alarm must be moved closer together. You should wait 60 seconds between tests.

---

## IMPORTANT!

The ability of the unit to react to an audible alarm must be checked upon installation and periodically verified!

Please note that short duration or intermittent alarm signals may not trigger the alarm dial-out.

---

## THE CALL-IN STATUS REPORT

You can call-in to the OMA-P4100 anytime to get a status report. The unit will answer the call-in after the number of rings programmed as *Rings Until Answer*. The unit will say the following:

STATEMENT	COMMENT
Hello	
This is telephone number _____	(the I.D. number) NO NUMBER
The time is _____	(current time)
Alert condition _____	OKAY 1 EXISTS 2 EXISTS 3 EXISTS 4 EXISTS
The temperature is _____ degrees (temperature alarm condition)	(temp. at probe)  OKAY THE TEMPERATURE IS HIGH THE TEMPERATURE IS LOW
Two*	
The temperature is _____ degrees*	(temp. at auxiliary probe)
The electricity is _____	ON OFF
Power off time _____ minutes _____ seconds (back-up battery condition)	(the total amount of time AC has failed)**  OKAY BATTERY CONDITION LOW REPLACE BATTERY
Sound level _____	OK HIGH  NO NUMBER***
Listen to the sound level for _____ seconds.	(listen-in for user- programmed time)

\* only if the optional second temperature probe is attached.

\*\* up to 255 minutes, 59 seconds

\*\*\* only if no dial-out telephone numbers programmed

After the listen-in, the OMA-P4100 will repeat the status report once more. At the end of the report, the P4100 will say "Have a good day," then disconnect from the telephone line.

## **AUTOMATIC DIAL-OUT**

The OMA-P4100 will automatically dial-out to the four telephone numbers you had programmed into its memory when one or more of the following conditions occurs (assuming the alarms are enabled):

- ♦ The AC power goes off for the user-programmed interval (1 to 199 seconds). The OMA-P4100 will locally say "The electricity is off." every 15 seconds for a user-programmed period.
- ♦ The temperature varies beyond the high or low limits you have programmed. This will cause the alarm message "The temperature is high" or "The temperature is low," respectively.
- ♦ A high sound level occurs whose duration is 10 seconds or longer. The P4100 will say "Sound level high."
- ♦ The status of Alerts 1, 2, or 3 changes for at least 200 milliseconds or the status of Alert 4 changes for at least 3 seconds. This will cause the alert message "Alert condition (1, 2, 3, or 4) exists."

The OMA-P4100 will announce the detected alarm condition locally through its speaker for thirty seconds, then start its automatic dial-out function. If the P4100 has been muted, it will still delay for 30 seconds before dialing-out.

The alarm message for AC power failure will be announced locally every 15 seconds for a user-programmed interval (see Chapter 2, page 25) before dial-out occurs. If the AC recognition is 15 seconds or less, you may not get a locally spoken message. After the recognition time has elapsed, the P4100 will instantly dial-out, without waiting 30 seconds.

The OMA-P4100 will dial Phone 1 and say "Hello. This is telephone number (the ID number)." It will state the alarm message, then allow a 4-second listen-in. This sequence will be repeated three more times. The P4100 begins talking after the last digit of the Phone number is dialed. Therefore, when you answer the phone, the P4100 could be at any point in its four repetitions, depending on how quickly you answer the phone.

After the fourth listen-in, the P4100 will say "Indicate you have received warning message. Dial telephone number (the I.D. number) within thirty seconds." Finally, the unit will disconnect from the telephone line.

The unit will then wait thirty seconds for an acknowledging call-back. If the alarm is not properly acknowledged, the P4100 will call Phone 2 and go through the same procedure. If there is no call-back, it will call Phone 3 and repeat the procedure. If that call is not acknowledged, the unit will call Phone 4. If there is no acknowledging telephone call, the OMA-P4100 will begin the entire procedure again, starting with Phone 1. If a certain Phone number is not programmed, the P4100 will skip to the next sequential programmed Phone number without a delay (e.g. if Phone 3 is not programmed, the P4100 will call Phone 4 if it does not receive a call-back from Phone 2).

This cycle can be stopped at any time by pressing any key.

---

## NOTE:

If only one Phone number is in memory, the OMA-P4100 will dial-out to it fifteen times, then stop, in accordance with FCC regulations.

---

## ACKNOWLEDGEMENT CALL-BACK

To acknowledge an alarm dial-out, you must call the unit back. The first ring of your call-back must occur within 30 seconds after the OMA-P4100 completes its alarm call and hangs up.

If TAD is enabled, the phone must ring two times. The P4100 will therefore answer the telephone before the TAD device. If TAD is disabled, the phone must ring 10 times. This is a precaution against a miscellaneous telephone call acknowledging the alarm.

When the P4100 answers the call-back, it will give a status report (see CHECKING THE I.D. NUMBER, page 29), then say "Warning message received by" and state the telephone number that acknowledged the alarm condition. It will discontinue further dialing-out for this alarm condition.

For example, your unit (I.D. number 215-555-4086) dials-out with an alert condition 3 that occurred at 3:47 AM. The temperature is 75° and the total amount of AC power failure is 197 minutes and 34 seconds (3 hours, 37 minutes, and 34 seconds). All other conditions are normal. There is no auxiliary temperature sensor connected to the unit. Someone at Phone 1 (1-215-555-4521) calls-in to acknowledge the alert condition. He or she would hear the following message:

*Hello.*



*This is telephone number two, one, five, five, five, five, four, zero, eight, six.*

*The time is three, forty-seven AM.*

*Alert condition three exists.*

*The temperature is 75 degrees.*

*Okay.*

*The electricity is on.*

*Power off time one hundred ninety-seven minutes, 34 seconds.*

*Battery condition okay.*

*Sound level okay.*

*Warning message received by one, two, one, five, five, five, five, four, five, two, one.*

Once an alarm condition has been acknowledged, the OMA-P4100 will return to normal functioning. If that condition then reoccurs or if any other alarm occurs, the automatic dial-out procedure starts again.

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## APPENDIX A: EXPLANATION OF KEYS

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<u>KEY</u>	<u>FUNCTION</u>
WHAT IS	-Used in interrogation of unit.
SET	-Used in programming of unit.
KEY	<ul style="list-style-type: none"><li>-When used with SET, programs the keyboard lock code and locks the keyboard.</li><li>-Used with WHAT IS to unlock the keyboard.</li></ul>
SENSOR ON/OFF	-Used to turn the various sensors ON or OFF.
L TEMP	<ul style="list-style-type: none"><li>-When used with SET, programs low temperature limit into memory.</li><li>-When used with SENSOR ON/OFF, turns ON/OFF the low temperature alarm.</li><li>-When used with WHAT IS, states low temperature limit and condition of the low temperature alarm.</li></ul>
H TEMP	<ul style="list-style-type: none"><li>-When used with SET, programs high temperature limit into memory.</li><li>-When used with SENSOR ON/OFF, turns ON/OFF the high temperature alarm.</li><li>-When used with WHAT IS, states high temperature limit and the condition of the high temperature alarm.</li></ul>
ELECT.	<ul style="list-style-type: none"><li>-When used with SET, programs the amount of time (from 1-199 seconds) the OMA-P4100 will wait before calling out with a power failure alarm.</li><li>-When used with SENSOR ON/OFF, turns ON/OFF the power failure alarm.</li><li>-When used with WHAT IS, states the amount of time programmed and condition of power failure alarm (ON or OFF).</li></ul>
SOUND	<ul style="list-style-type: none"><li>-When used with SET, programs the amount of time (from 1-199 seconds) you can listen-in over the microphone probe.</li><li>-When used with SENSOR ON/OFF, turns the high sound alarm ON/OFF.</li><li>-When used with WHAT IS, states amount of listen-in time in seconds and the condition of the high sound alarm.</li></ul>
PAUSE	<ul style="list-style-type: none"><li>-When used while entering a <i>dial-out</i> telephone number, programs the OMA-P4100 to pause while it accesses an outside telephone line.</li></ul>

TONE	-When used as the first digit of a <i>dial-out</i> telephone number, programs the OMA-P4100 to dial-out using touch-tone.
MUTE	-When used as the first digit the I.D. number, programs the OMA-P4100 to mute the speaker during call-in and dial-out.
AM	-When used while programming time, sets the time to be AM.
I.D.	-When used with SET, programs unit's identification number and sets the normality of the alert inputs. -When used with WHAT IS, gives a full status report.
RINGS	-When used with SET, programs the number of rings before the unit answers the telephone. -When used with SENSOR ON/OFF, turns ON/OFF units compatibility with an answering machine. -When used with WHAT IS, states the number of rings before the unit will answer the telephone.
ENTER	-Used in programming of unit to enter information into OMA-P4100's memory.
PM	-When used while programming time, sets the time to be PM.
ON	-Used to activate the OMA-P4100 for all operating functions.
OFF	-Used to deactivate the OMA-P4100 and its operating functions.
TEMP	-When used with WHAT IS, states the current temperature.
TIME	-When used with SET, programs the time into the P4100. -When used with WHAT IS, states the current time.

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## APPENDIX B: VALID KEYBOARD SEQUENCES

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**NOTE:** The commands in brackets [] are optional.

### INTERROGATION COMMAND SEQUENCES

WHAT IS	1	<i>Phone 1</i>
WHAT IS	2	<i>Phone 2</i>
WHAT IS	3	<i>Phone 3</i>
WHAT IS	4	<i>Phone 4</i>
WHAT IS	L TEMP	<i>low temp. limit</i>
WHAT IS	H TEMP	<i>high temp. limit</i>
WHAT IS	SOUND	<i>listen-in time</i>
WHAT IS	ELECT.	<i>AC recognition time</i>
WHAT IS	I.D.	<i>I.D. number</i>
WHAT IS	RINGS	<i>rings until answer</i>
WHAT IS	TEMP	<i>temperature</i>
WHAT IS	TIME	<i>time</i>

### PROGRAMMING COMMAND SEQUENCES

SET	L TEMP	[PAUSE]	(number)	ENTER	<i>low temp. limit</i>		
SET	H TEMP	[PAUSE]	(number)	ENTER	<i>high temp. limit</i>		
SET	ELECT.		(number)	ENTER	<i>AC recognition time</i>		
SET	SOUND		(number)	ENTER	<i>listen-in time</i>		
SET	I.D.	[MUTE]	(number)	ENTER	<i>I.D. number and alert normality</i>		
SET	TIME	(number)	AM	ENTER	<i>AM time</i>		
SET	TIME	(number)		PM	<i>PM time</i>		
SET	1	[TONE]	(number)	[PAUSE]	(number)	ENTER	<i>Phone 1</i>
SET	2	[TONE]	(number)	[PAUSE]	(number)	ENTER	<i>Phone 2</i>

SET	3	[TONE]	(number)	[PAUSE]	(number)	ENTER	<i>Phone 3</i>
SET	4	[TONE]	(number)	[PAUSE]	(number)	ENTER	<i>Phone 4</i>

## ENABLING/DISABLING SENSORS

SENSOR ON/OFF	1	ENTER	<i>Alert 1 alarm</i>
SENSOR ON/OFF	2	ENTER	<i>Alert 2 alarm</i>
SENSOR ON/OFF	3	ENTER	<i>Alert 3 alarm</i>
SENSOR ON/OFF	4	ENTER	<i>Alert 4 alarm</i>
SENSOR ON/OFF	L TEMP	ENTER	<i>low temp. alarm</i>
SENSOR ON/OFF	H TEMP	ENTER	<i>high temp. alarm</i>
SENSOR ON/OFF	ELECT.	ENTER	<i>AC failure alarm</i>
SENSOR ON/OFF	SOUND	ENTER	<i>high sound alarm</i>
SENSOR ON/OFF	RINGS	ENTER	<i>TAD compatibility</i>

## DELETING PARAMETERS

SET	I.D.	ENTER	<i>I.D. number</i>
SET	1	ENTER	<i>Phone 1</i>
SET	2	ENTER	<i>Phone 2</i>
SET	3	ENTER	<i>Phone 3</i>
SET	4	ENTER	<i>Phone 4</i>

## SECURITY CODE

SET	KEY	(number)	ENTER	<i>lock keyboard</i>
WHAT IS	KEY	(number)	ENTER	<i>unlock keyboard</i>

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## APPENDIX C: ACCESSORIES

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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 OMEGA's Sales Department at 1-800-82-66342 (1-800-TC-OMEGA) for more information.

MODEL NUMBER	SENSOR/SWITCH
OMA-PX04	Water Detection Sensor
OMA-PX05	Remote Temperature Sensor
OMA-PX06	Magnetic Reed Switch
OMA-PX22	Temperature Switch
OMA-PX24	P4100 Output controller

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## APPENDIX D: APPLICATIONS

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There are many ways to apply the OMA-P4100 to your needs. Listed below are some of the ways our customers have used the OMA-P4100, employing the built-in sensors for power failure, high sound level, and temperature, plus the additional sensors listed in Appendix C.

PURPOSE	LOCATION	SENSORS/INPUTS
SECURITY	RESIDENCES VACATION HOMES MOBILE HOMES BUSINESSES OFFICES BUILDINGS	MAGNETIC REED SWITCHES  PASSIVE INFRARED MOTION DETECTORS
TEMPERATURE	RESIDENCES OFFICES FACTORIES REFRIGERATORS HVAC SYSTEMS GREENHOUSES ANIMAL BUILDINGS POULTRY BUILDINGS FANS/BLOWERS COMPUTER ROOMS TELECOM ROOMS	REMOTE TEMPERATURE SENSORS  TEMPERATURE SWITCH  TEMPERATURE SWITCHES  POWER FAILURE ALARM
FIRE	RESIDENCES OFFICES FACTORIES REFRIGERATORS HVAC SYSTEMS ANIMAL BUILDINGS POULTRY BUILDINGS COMPUTER ROOMS TELECOM ROOMS	SMOKE/FIRE ALARMS
HUMIDITY	LABORATORIES TEST CHAMBERS FACTORIES GREENHOUSES	HUMIDISTATS

PURPOSE	LOCATION	SENSORS/INPUTS
FUMES/GASES	MINES FACTORIES LABORATORIES BOATS/SHIPS CHEMICAL PLANT FAN VENTILATORS ANIMAL BUILDINGS	FUME/GAS ALARM*  POWER FAILURE ALARM
LIQUID LEAKS AND LEVELS	BOATS/SHIPS PUMPS/VALVES BASEMENTS STORAGE TANKS COMPUTER ROOMS WATER TREATMENT FACILITIES	WATER DETECTION SENSOR  POWER FAILURE ALARM

\* not available from OMEGA



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## APPENDIX E: ERROR MESSAGES

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There are two possible error messages that the OMA-P4100 will give you if you make a detectable error in programming.

### NUMBER LIMIT

Too many digits entered for that particular memory location.

### ERROR 1

Keys pressed in wrong order.

### ERROR 2

Wrong keyboard lock code or no code entered.

### ERROR HIGH

A value entered was too high.

### ERROR LOW

A value entered was too low.

The OMA-P4100 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 by using **WHAT IS**.

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## APPENDIX F: MAINTENANCE

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The following procedure is a condensed version of our factory test. It should be performed upon installation and repeated periodically.

- 1) Check to verify the correct telephone numbers for automatic dial-out are in memory by pressing **WHAT IS** and the Phone number (1, 2, 3, or 4).
- 2) Test the dial-out ability of the OMA-P4100 by removing the 110 VAC power supply from the wall outlet, with the battery charged and connected. The unit should dial-out with its "The electricity is off" alarm message after user-programmed time.
- 3) Test the alert inputs by changing the status of the sensors connected to each alert terminal for at least 200 milliseconds. To do so, place one end of a small piece of wire on the input terminal and place the other end on *common*.
- 4) Check the high sound alarm by pressing the test button on your smoke alarm until the OMA-P4100 reacts with an automatic dial-out.
- 5) After checking the dial-out ability, test the battery by leaving the AC plug out for at least 5 minutes. After that amount of time has elapsed, press **WHAT IS** and **I.D.** to obtain a status report. If the battery condition is fine, you will just get a regular status report. Otherwise, you will get a status report with a "Battery condition low" alarm message. If the batteries are too low, you will get the "Replace battery" message.
- 6) Test the call-in feature by calling the unit to get a status report and *listen-in*.

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## APPENDIX G: TROUBLESHOOTING

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### PROBLEM

### POSSIBLE CAUSE

Unit does not talk.

- Unit not ON.
- Battery not connected.
- Wall transformer not plugged into a 110 VAC outlet.

Unit does not dial out automatically.

- No telephone numbers entered in Phone 1 through Phone 4.
- Unit not ON.
- Telephone jack not connected.
- Wall transformer not plugged into a 110 VAC outlet.

Unit does not answer incoming calls after the prescribed number of rings.

- Wall transformer not plugged into 110 VAC outlet.
- Incompatibility with telephone system.
- Unit not ON.
- Telephone jack not connected.
- Battery not connected.

Unit does not function normally.

- Unit programmed or installed incorrectly.
- Unit was exposed to power surge through power and/or telephone lines.
- Sensors and/or wiring damaged or defective.

Invalid low  
temperature alert.

-There is a bad or broken  
temperature connection between  
the OMA-P4100 and the  
temperature sensor. May cause  
alarm dial-outs and status report  
temperature readings of -20° F.

Before sending your P4100 in for service, do the following:

- 1) Carefully reread the instruction manual to be certain that all connections and programming were done correctly.
- 2) Reset the OMA-P4100 using the following procedure:
  - a) Remove the AC power supply from the 110 VAC wall outlet and disconnect the battery.
  - b) Allow the unit to remain unpowered for 1 minute.
  - c) Restart and reprogram the OMA-P4100 in accordance with the instructions in this manual.
  - d) Retest all functions and sensors.

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## **APPENDIX H: RETURNING YOUR UNITS FOR SERVICE**

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In the event that your P4100 does not function properly and you cannot reprogram it, we suggest that you do the following:

- 1) Refer to Appendix G, **TROUBLESHOOTING**.
- 2) Carefully write down your observations of the P4100's malfunctioning.
- 3) Call OMEGA's Customer Service at 1-800-622-2378 (1-800-622-BEST) 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) Call OMEGA's Customer Service at 1-800-622-BEST to obtain an authorized return (AR) number. This number should then be marked on the outside of the return package.
- 4) 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 P4100's problem

# NOTES

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## **TEMPERATURE**

- ☐ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ☐ Wire: Thermocouple, RTD & Thermistor
- ☐ Calibrators & Ice Point References
- ☐ Recorders, Controllers & Process Monitors

## **PRESSURE/STRAIN**

- ☐ Transducers & Strain Gauges
- ☐ Load Cells & Pressure Gauges
- ☐ Instrumentation

## **FLOW**

- ☐ Rotameters & Flowmeter Systems
- ☐ Air Velocity Indicators
- ☐ Turbine/Paddlewheel Systems
- ☐ Vortex Meters and Flow Computers

## **pH**

- ☐ Electrodes & Transmitters
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## **DATA ACQUISITION**

- ☐ Data Acquisition and Engineering Software
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