

Refrigerator/Freezer Guard

Temperature Monitor and Alarm

Model VM500-5

Manual and Installation Instructions

Index	Page
General Description	3
Wiring Diagram	4
Installation	5
TABLE 1: Temperature Measurement Error vs. Cable Length	5
Accessing the Refrigerator/Freezer Guard	6
Programming Temperature Sensor Parameters	6-8
Programming the Door Sensor Input	9
Callout Disable Input	9
Programming the Autodialer Functions	10-13
Programming Contact Telephone Numbers	10
Programming Local ID Number	11
Recording a Unit ID Message	11
Programming the Number of Rings	11
Programming the "Full Access" PIN	12
Programming Reminder Calls	12
Programming Warning Message Repetitions	12
Using the Refrigerator/Freezer Guard	14
Checking Sensor Inputs Locally	14
Checking Sensor Inputs Remotely	14
Clearing High and Low Temperature Readings Locally	14
Clearing High and Low Temperature Readings Remotely	14
Confirming Alarm Conditions Remotely	15
Confirming Alarm Conditions Locally	15
Interpreting the Display	16-18
Frequently Asked Questions	19-20
Troubleshooting	21
Extended Battery Backup	21
FCC Part 68 Information	22
Limited Warranty	23

General Description

The Refrigerator/Freezer Guard is a complete multiple refrigerator/freezer monitor and alarm system with integrated autodialer.

The Refrigerator/Freezer Guard monitors up to eight (8) temperature sensors, an unlimited number of magnetic door sensors, and power.

The Refrigerator/Freezer Guard has programmable high and low temperature limits and an alarm time delay for each sensor. An identification message can be recorded for each sensor, indicating where the sensor is located to allow a quick response to a problem. The Refrigerator/Freezer Guard has numerous options that allow it to be configured for any application.

The Refrigerator/Freezer Guard can monitor refrigerator/freezer doors with its dedicated door sensor input. A time delay can be programmed, enabling a freezer door to be left open for a maximum amount of time before the buzzer is activated and the Refrigerator/Freezer Guard begins its alarm procedures.

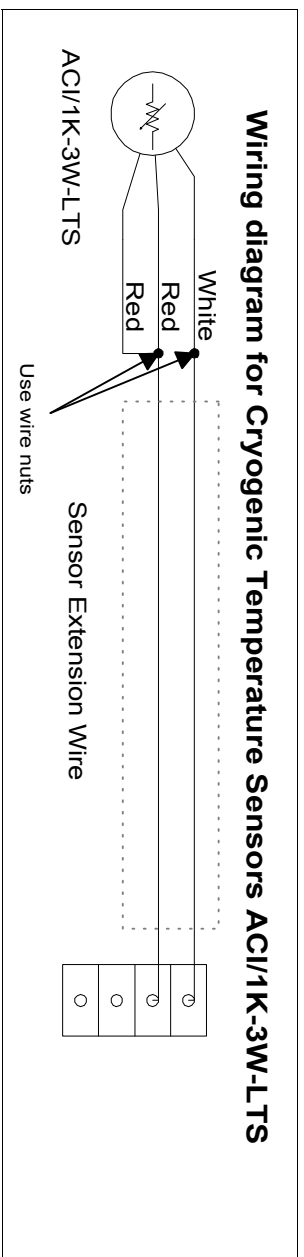
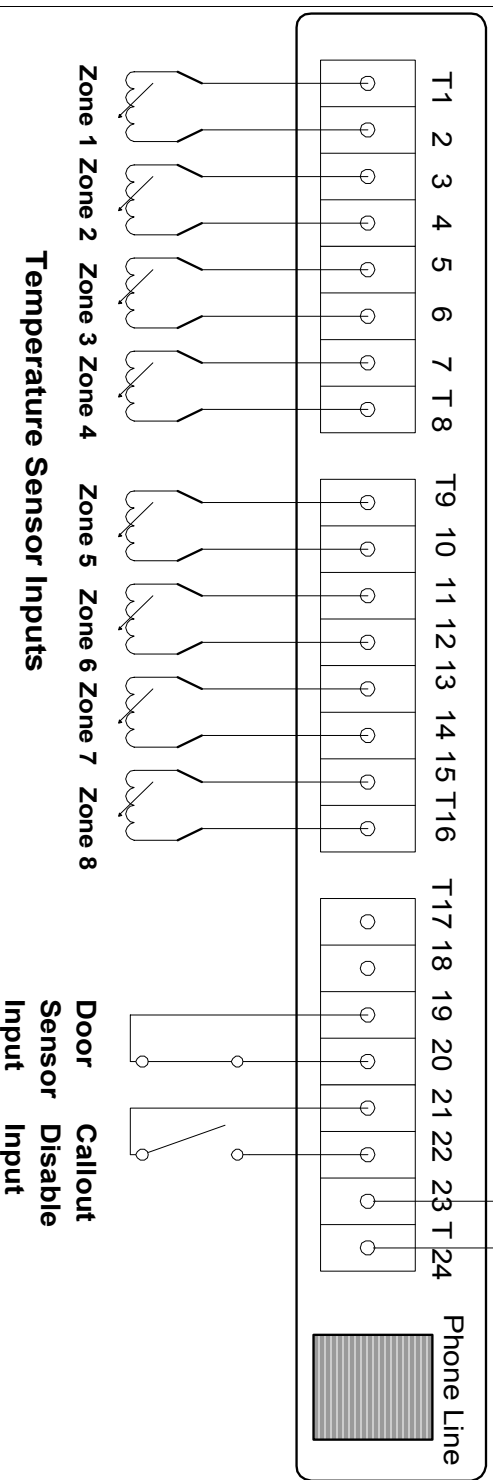
The Refrigerator/Freezer Guard also has a callout disable input, which can prevent unnecessary callouts during specific times or events, by connecting a "time-of-day" clock.

The Refrigerator/Freezer Guard will turn on the alarm relay and buzzer and begin making emergency notification calls when the temperature of any refrigerator/freezer is out of limits for greater than the alarm time delay or if a freezer door has been left open.

Installing the Refrigerator/Freezer Guard

- Select a location with access to power and an analog telephone

Wiring Diagram for Bullet Probe/Stainless Plate Temperature Sensors ACI/1K-2W-BP/ACI/1K-2W-SP Alarm Relay Output



line.

- Mount the Refrigerator/Freezer Guard to the wall using the supplied hardware.
- Connect the phone line to an active analog telephone jack.

It is recommended that a surge suppresser be used for the phone line.

- Plug in the wall mount transformer into a 120VAC wall outlet and connect the jack into the Refrigerator/Freezer Guard.

It is recommended that a surge suppresser also be used for the power line.

- **Connect Sensors and Inputs**

For ease of wiring, remove the terminal blocks by pulling straight down. Follow the wiring diagram on the previous page.

Temperature Sensors

Locate the sensor so that it will yield an average temperature. If specific items within a fridge or freezer are being monitored, locate the sensors as close as possible to those items. The temperature throughout a fridge or freezer can vary widely.

Try to avoid locating the sensors in air streams. The temperature sensor wires can be extended as required. See Table 1 for temperature error vs. wire gauge.

Door Sensor Input

Wire closed loop magnetic door sensors to the Door Sensor Input (terminals 19 and 20), to detect when refrigerator/freezer doors are open. Multiple door sensor switches can be wired in series.

Callout Disable Input

Wire a time-of-day clock to the Callout Disable Input (terminals 21 and 22) to prevent unnecessary phone calls during working hours or defrost cycles.

Temperature Sensors must be installed before turning on the unit.

- Turn on the Refrigerator/Freezer Guard by moving the power switch to the left of the terminal blocks to the "1" position.

Accessing the Refrigerator/Freezer Guard

TABLE 1: Temperature Measurement Error vs. Cable Length			
To calculate error in degrees F, due to extension cable length, multiply the Error per Foot times the total length of cable between the VM500 and the sensor.			
Part #	Wire Gauge	Error per Foot	Example error for a sensor 50 feet from the VM500-5 would see an increase of:
WIR-I-18-250	18 AWG	0.0033°F/Ft	.0033°Ft * 2 * 50Ft = .33°
WIR-I-22-250	22 AWG	0.0083°F/Ft	.0083°Ft * 2 * 50Ft = .83°

- 1 From another phone line call the Refrigerator/Freezer Guard. The device will pick up after the programmed number of rings (Default is 1).
- 2 To access all functions, enter the 4-digit "Full Access" PIN. (Factory default is 0000). To access only the "Confirmation Only" functions, enter the 4-digit "Confirmation Only" PIN 1234.
The "Confirmation Only" functions are:
 - A) Confirming Alarm Conditions Remotely
 - B) Checking Sensor Inputs Remotely
- 3 You will hear the Main Menu options:

Main Menu	
Option	Function
1	Status
2	Set Limits
3	Program
#	<i>Repeat Warning message (if any input is in alarm condition)</i>
0	Exit (Hang Up the phone)

NOT
SPOKEN
MENU ITEM

Each temperature sensor has four (4) programmable parameters as well as

Programming Temperature Sensor Parameters

a programmable temperature correction.

Sensor Identification Message. The Sensor ID message will be played when the Refrigerator/Freezer Guard is reporting the status of that Sensor.

Sensor Low and High Temperature limits. The low and high temperature limit values are programmed in degrees. When a sensor's temperature exceeds either the high or low limit for longer than the programmed callout time delay, that sensor will be in alarm condition.

Sensor callout time delay. A sensor's temperature must be out of limits for greater than the callout delay time for the sensor to be in alarm condition.

Programming Sensor Parameters

1. Accessing the Sensor Configuration

- a) From the Main Menu, press 2 to Set Limits

- ▶ The "Full Access" PIN will be requested if the "Confirmation Only" PIN was entered initially. If the correct "Full Access" PIN is not entered, the Refrigerator/Freezer Guard will hang up.
- b) You will hear "*Enter Sensor Number*"
- c) Enter the sensor you want to program (1-8)
 - ▶ To return to the Main Menu press 0
- d) Proceed to Step 2.a.

2. Programming the Sensor ID message

- a) You will hear "Sensor x *message is*"
- b) You will hear "*Press 1 to change*"
- c) Press **1** to change the message
 - ▶ Press 2 to skip and proceed to step 3.a or press 0 to stop programming this sensor and return to step 1.b
- d) You will hear a tone
- e) Begin speaking after the tone. The Refrigerator/Freezer Guard will record for about 2 seconds



TIP

Record something specific that will allow the people receiving the alarm calls to understand where the problem is.
 "Vaccine storage fridge" or "freezer in room 102" are two good examples of useful messages.

- f) After 2 seconds you will hear the tone again, marking the end of your message
- g) You will hear the message you recorded
- h) Proceed to step 3.a

3. Programming the Lower and Upper Temperature Limits

- a) You will hear "Sensor x *lower limit is*" and the current low temperature limit for that sensor (i.e. 35°)
- b) You will hear "*Press 1 to change*"
- c) Press **1** to change the limit
 - ▶ Press 2 to skip and proceed to step 3.g or press 0 to stop programming this sensor and return to step 1.b
- d) You will hear "*Enter number then press pound*"
- e) Enter the value then press **#**.
 - ▶ Use * to program a negative number (i.e. *20 = -20°)
 - ▶ Acceptable range is -999 to 999
- f) You will hear the value you just entered (i.e. 39°)
- g) You will hear "Sensor x *upper limit is* " and the current high temperature limit for the selected sensor (i.e. 60°)
- h) You will hear "*Press 1 to change*"
- i) Press **1** to change the limit
 - ▶ Press 2 to skip and proceed to step 3.g or press 0 to stop programming this sensor and return to step 1.b
- j) You will hear "*Enter number then press pound*"

- k) Enter the value then press #.
 - ▶ Use * to program a negative number (i.e. *20 = -20°)
 - ▶ Acceptable range is -999 to 999
- l) You will hear the value you just entered (i.e. 50°)
- m) Proceed to step 4.a

4. Programming the callout delay time

- a) You will hear "*Callout time delay is x minutes press 1 to change*" (default 0 minutes)
 - b) Press 1 to make a change
 - ▶ Press 2 to skip and return to step 1.b
 - c) You will hear "*Enter number then press pound*"
 - d) Enter the time delay in minutes (i.e. 15 for 15 minutes or 0 minutes for an immediate callout)
 - ▶ Acceptable range is 0 to 900 minutes
 - e) You will hear the value you just entered
 - f) Proceed to step 1.b
- Repeat the steps 1 to 4 for each additional sensor.

Programming Temperature Corrections

The Refrigerator/Freezer Guard allows the user to correct for small temperature measurement errors due to sensor cable extension length for each sensor. A calibrated standard must be used to obtain the actual temperature.

- a) From the Main Menu, press 2 to Set Limits
- b) You will hear "Enter Sensor Number"
- c) Enter #
- d) You will hear "*Enter Sensor Number to Adjust*"
- e) Enter the number of the sensor you want to correct (1-8)
 - ▶ To return to the Set Limits Menu press 0
- f) You will hear "*Enter Sensor Number x Actual Temperature, then press pound*"
- g) Enter the actual temperature measured using the standard, then press #.
 - ▶ Use * for negative numbers (i.e. *20 = -20°)
 - ▶ The maximum the temperature measurement can be corrected is +-10° from the currently displayed temperature.
(i.e. If the temperature currently being displayed is 20°, the max correction is 30° and the min correction is 10°. An "invalid" message is played for larger corrections.)
- h) You will hear the corrected temperature and the corrected temperature will be displayed on the display.

To enable the Door Sensor Input to go into alarm condition and generate alert callouts, it must be programmed with a time delay of at least 1 minute.

- a) From the Main Menu, press 2 to set Limits
- b) You will hear "Enter Sensor Number"

Programming the Door Sensor Input

- c) Enter 9.
 - ▶ To return to the Main Menu press 0
- d) You will hear "Door callout time delay is xx minutes press 1 to change" (default 0 minutes)
- e) Press 1 to make a change or press any other button to not make a change
- f) You will hear "Enter number then press pound"
- g) Enter the time delay in minutes (i.e. 15 for 15 minutes or 0 minutes for an immediate callout)
 - ▶ Acceptable range is 0 to 900 minutes
 - ▶ An entry of 0 will disable the Door Sensor Input
- h) You will hear the value you just entered
- i) You will be returned to the Set Limits Menu

This input has no programmable parameters.

The function of the Callout Disable input is to prevent the Refrigerator/Freezer Guard from making phone calls during fixed periods of time, such as working hours.

Callout Disable Input

To prevent the Refrigerator/Freezer Guard from calling out, wire the input to the normally open contacts of a time-of-day clock. When the time-of-day clock closes it's contacts, no emergency phone calls will be made.

If an alarm condition exists when the contacts are closed the Refrigerator/Freezer Guard will turn on the alarm buzzer and relay to alert local personnel of the problem. (The buzzer and relay will not activate if the power is out.)

The cause of the alarm can be determined by examining the display or calling the unit.

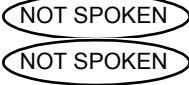
Accessing the Program Menu

From the Main Menu, press 3

- ▶ The "Full Access" PIN will be requested if the "Confirmation Only" PIN was entered initially. If the correct "Full Access" PIN is not entered, the Refrigerator/Freezer Guard will hang up.

Programming the Autodialer Functions

Program Menu	
Option	Function
1	Program Contact Telephone Numbers
2	Program Local ID Number
3	Record Unit ID Message
4	Program Number of Rings
5	Change "Full Access" PIN
6	Program Reminder Calls
7	Program Repeat Warning Messages
*	Change Callout Time Delay
#	Change "Acknowledge Only" PIN
0	Exit (return to Main Menu)


**Program-
ing Con-
tact Tele-
phone/
Pager**

Numbers

The Refrigerator/Freezer Guard stores up to four (4) contact telephone or pager numbers.

- 1 From the Program Menu, Select **1** to set telephone numbers.
- 2 You will hear "*Select contact one to four*"
- 3 Select **1** for the first contact number, **2** for the second contact number, **3** for the third contact number, or **4** for the fourth contact number.
 - ▶ Press 0 to return to the Program Menu.
- 4 You will hear "*Contact x is xxxxxxx*" or "*Contact x is Empty, press one to change*"
- 5 Press **1** to make a change or enter a telephone number.
- 6 You will hear "*Enter number then press pound*"
- 7 Enter the number, followed by a **#**
 - ▶ For pager numbers, enter * as the first digit of the number
 - ▶ Enter the full telephone number (**1 + area code if necessary**)
 - ▶ If an extra delay between digits or after dialing is required, entering * will provide a two second delay. Do not enter * for the first digit unless programming a pager number.
 - ▶ Entering only the **#** key will erase the currently programmed contact telephone number.

- 8 You will hear the telephone number you just entered.
- 9 You will be prompted to select another contact to program.
 - ▶ Press 0 to return to the Program Menu.

Programming a Local Identification Number For Pagers

The local ID number is printed on a pager's display, when calls are made to a pager. The ID number can be up to 20 digits long.

- 1 From the Program Menu, press **2** for the local ID
- 2 You will hear the programmed number or the Refrigerator/Freezer Guard will say "Empty"
- 3 You will hear "*Press one to change*"
- 4 Press **1** to make a change or **2** to return to the Program Menu
- 5 You will hear "*Enter number, then press pound*"
- 6 Enter the number, followed by a **#**
- 7 You will hear the number you just entered.
- 8 You will be automatically returned to the Program Menu

Recording a Unit Identification Message

During callouts, this message is played to identify the unit. Record a message to help ID where the Refrigerator/Freezer Guard is located.

- 1 From the Program Menu, press **3** to record a message
- 2 If this is the first time setup, go to step 4
- 3 You will hear the recorded message



TIP

Record something to identify where the monitor is located to allow people receiving the alarm calls to understand what is calling them. "Springfield Pediatrics vaccine temp monitor" or "ABC Cold Storage warehouse 3" are two good examples of useful messages.

- 4 You will hear "*Press one to change.*"
- 5 Press **1** to make a change or **2** to return to the Program Menu
- 6 You will hear a tone
- 7 Begin speaking after the tone. The Refrigerator/Freezer Guard will record for about 4 seconds
- 8 After 4 seconds you will hear the tone again, marking the end of your message
- 9 You will hear the message you recorded
- 10 You will be automatically returned to the Program Menu

Programming the Number of Rings

The Refrigerator/Freezer Guard answers the telephone line after the programmed number of rings. Valid rings are 1 – 25. The setting can be used to enable the Refrigerator/Freezer Guard to share a line with another device. See the Frequently Asked Questions section for details.

- 1 From the Program Menu, press **4** to set the number of rings
- 2 You will hear the programmed number of rings
- 3 You will hear "*Press one to change.*"
- 4 Press **1** to make a change or **2** to return to the Program Menu
- 5 You will hear "*Enter number then press pound*"

- 6 Enter the number of rings, then press #
- 7 You will hear the number of rings you entered
- 8 You will be automatically returned to the Program Menu

Programming the "Full Access" PIN Number

The Refrigerator/Freezer Guard has a programmable "Full Access" 4-digit PIN number (0000-9999) to allow users to access the Set Limits option and Program sub-menu, and to confirm alarm conditions.

PIN number must be 4 digits and must not include a # sign.

- 1 From the Program Menu, press **5** to change the "Full Access" PIN
- 2 You will hear the programmed PIN number
- 3 You will hear *"Press one to change."*
- 4 Press **1** to make a change or **2** to return to the Program Menu
- 5 You will hear *"Enter number"*
- 6 Enter a four digit number
- 7 You will hear the PIN number you just entered
- 8 You will be automatically returned to the Program Menu

Programming the "Acknowledge Only" PIN Number

The Refrigerator/Freezer Guard has a programmable "Acknowledge Only" 4-digit PIN number (0000-9999) to allow users to only to confirm alarm conditions.

PIN number must be 4 digits and must not include a # sign.

- 1 From the Program Menu, press **#** to change the "Acknowledge Only" PIN
 - 2 You will hear the programmed PIN number
 - 3 You will hear *"Press one to change."*
 - 4 Press **1** to make a change or **2** to return to the Program Menu
 - 5 You will hear *"Enter number"*
 - 6 Enter a four digit number
 - 7 You will hear the PIN number you just entered
- You will be automatically returned to the Program Menu

Programming Reminder Calls

If a temperature is out of limits or a refrigerator/freezer door remains open after the alarm has been acknowledged, the Refrigerator/Freezer Guard can make "reminder calls". This feature alerts personnel that a problem still exists, and has not been fixed. The reminder call delay can be programmed from 0 to 900 minutes.

- 1 From the Program Menu, press **6**
- 2 You will hear "Off"
- 3 You will hear *"Press one to change."*
- 4 Press **1** to change this setting, or **2** to return to the Program Menu.
- 5 You will hear "On"
- 6 You will hear "Callout time delay is XX minutes press 1 to change"
(Default value is 60 minutes)
- 7 Press **1** to make a change or press **2** to not make a change
- 8 You will hear "Enter number then press pound"

- 9 Enter the time delay in minutes (i.e. 120 for 2 hours)
- 10 You will hear the value you just entered
- 11 You will be automatically returned to the Program Menu

Programming Warning Message Repetitions

During callouts the Refrigerator/Freezer Guard will repeat the local ID message and warning conditions a programmable number of times (Default 1 repetition)

- 1 From the Program Menu, press **7**
- 2 You will hear "Warning Reminder is 1"
- 3 You will hear "*Press one to change.*"
- 4 Press **1** to change this setting, or **2** to return to the Program Menu.
- 5 You will hear "Enter number then press pound"
- 6 Enter the number of times (0, 1, or 2) that you would like the warning message repeated.
- 7 You will hear the value you just entered
- 8 You will be automatically returned to the Program Menu

Changing the Callout Delay Time

When a refrigerator or freezer's temperature is out of range the Refrigerator/Freezer Guard will wait this programmable amount of time before making telephone alert calls. (Default 2 minutes)

- 1 From the Program Menu, press *****
- 2 You will hear "Callout Time Delay is 2 minutes"
- 3 You will hear "*Press one to change.*"
- 4 Press **1** to change this setting, or **2** to return to the Program Menu.
- 5 You will hear "Enter number then press pound"
- 6 Enter the time delay in minutes (i.e. 60 for 1 hour)
- 7 You will hear the value you just entered
- 8 You will be automatically returned to the Program Menu

Application notes can be downloaded from the documentation section of our website at www.TemperatureGuard.com.

Checking Sensor Inputs Locally

All temperature sensors connected will have their temperature readings dis-

Using the Refrigerator/Freezer Guard

played next to the sensor number on the display. High and low readings are displayed on the right side of the display in the status window at 2 second intervals. If the Door Sensor Input has been enabled (see programming the Door Sensor Input section) and a door is open the Door Sensor Status will be displayed in the status window.

Checking Sensor Inputs Remotely

- 1 Call the Refrigerator/Freezer Guard
- 2 Enter you PIN number
- 3 From the main menu press **1**
- 4 You will hear "Enter Sensor Number"
- 5 Enter the number of the sensor you wish to hear (i.e. 1) or enter 9 to hear the status of the Door Sensor Input
- 6 For Temperature Sensors, you will hear the sensor's temperature and the highest and lowest reading, and how long the sensor has been out of limits in minutes.
For the Door Sensor Input, you will hear the status of the door sensor switches, unless power is out. If power is out you will hear, "*Power is out*".

Clearing High and Low Temperature Readings Locally

High and low temperature readings can be cleared by holding the black pushbutton on the front of the enclosure down for at least 5 seconds while that sensor's data is being displayed.

Clearing High and Low Temperature Readings Remotely

- 1 Call the Refrigerator/Freezer Guard
- 2 Enter the "Full Access" PIN number
- 3 From the main menu press **1**
- 4 You will hear "Enter Sensor Number"
- 5 Press #
- 6 You will hear "Enter Sensor Number to Change"
- 7 Enter the number of the sensor whose min and max readings you wish to reset to the current temperature.

Checking the Status of the Callout Override Input Remotely

- 1 Call the Refrigerator/Freezer Guard
- 2 Enter your PIN number
- 3 From the main menu press **1**
- 4 You will hear "Enter Sensor Number"
- 5 Enter * to check the input.
- 6 You will hear the status of the input, unless power is out.

Confirming Alarm Conditions Remotely

During callouts, the Refrigerator/Freezer Guard will prompt you to enter a

PIN number, enter either the Full Access PIN or "1234", the Confirmation Only PIN.

If you have received a page or a voice mail message regarding an alarm condition that you wish to confirm. Simply call the Refrigerator/Freezer Guard and enter either the Full Access PIN or "1234", the Confirmation Only PIN, The alarm relay will de-energize, and the Refrigerator/Freezer Guard will stop making callouts for the current alarm condition. **This action does not override the Reminder Call feature.**

Confirming Alarm Conditions Locally

To confirm an alarm condition locally push the black button on the left side of the Refrigerator/Freezer Guard. The alarm relay will de-energize, and the Refrigerator/Freezer Guard will stop making callouts for the current alarm condition. **This action does not override the Reminder Call feature.**

When does the Refrigerator/Freezer Guard callout?

The Refrigerator/Freezer Guard will callout when any sensor/input is in an alarm condition and has not been confirmed.

When an alarm condition first occurs, the Refrigerator/Freezer Guard turns on the alarm relay and buzzer, and then waits two minutes to allow local personnel time to react to the alarm.

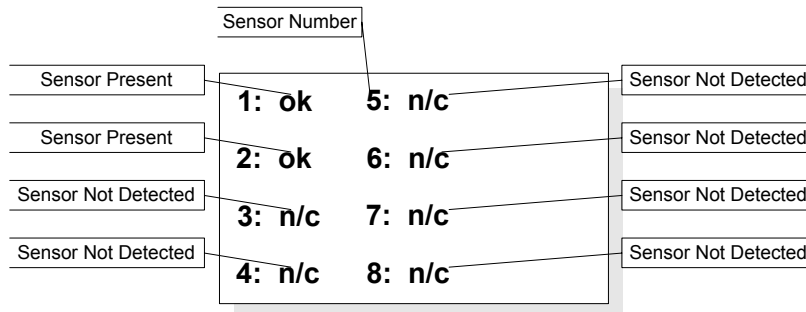
Interpreting the Display

Start Up

When starting up, the Refrigerator/Freezer Guard checks each temperature sensor input to verify a good sensor reading.

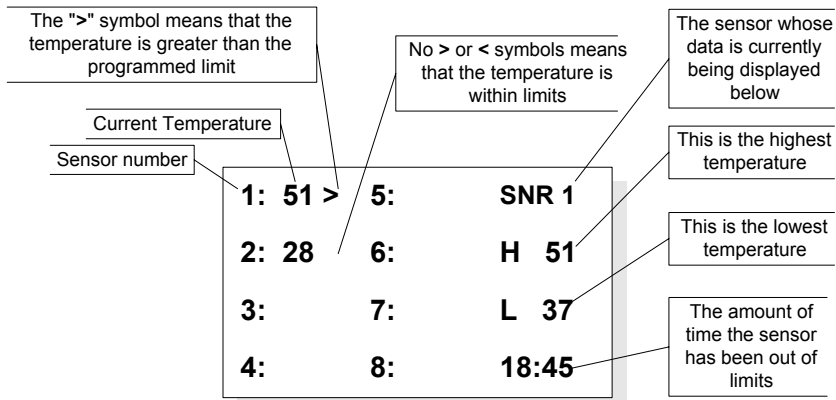
If a sensor is connected and has a reading within range, "ok" will be printed next to that sensors label.

If a sensor is not connected or does not have a reading within range, "n/c" will be printed next to that sensors label.



Sensor Reading

The Refrigerator/Freezer Guard continuously displays all temperatures simultaneously and cycles through the maximum and minimum values for each sensor in the right side of the screen.



Alarm Conditions

When an alarm condition occurs, the alarm relay and buzzer are activated and the Refrigerator/Freezer Guard waits 2 minutes before making callouts.

The time remaining before alarm callouts commence is displayed.

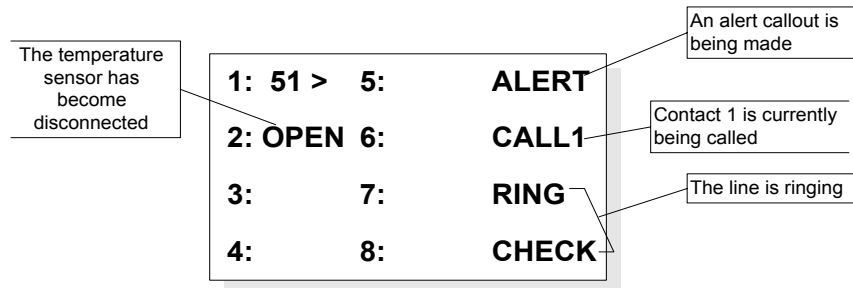
During this time, onsite personnel can cancel the emergency by pressing the black alarm acknowledge button on the face of the Refrigerator/Freezer Guard.

1: 51 >	5:	CALL-
2: 28	6:	OUTS
3:	7:	IN
4:	8:	01:58

Alarm Callouts

When the Refrigerator/Freezer Guard is making callouts, the status is displayed in the right side of the screen.

While the Refrigerator/Freezer Guard is making telephone calls, the display is not updated with new temperature readings.



Sensor Reading After Callouts

If the Refrigerator/Freezer Guard has called all programmed telephone numbers and not made contact it will wait 20 minutes before attempting to callout again. Periodically, the time before callouts resume will be displayed.

1: 51 >	5:	CALL-
2: 28	6:	OUTS
3:	7:	IN
4:	8:	17:25

Frequently Asked Questions

When is a sensor/input in alarm condition?

When a temperature sensor has been out of limits for greater than the programmed time delay.

When a temperature sensor opens or shorts after having been connected.

When the door sensor has been open longer than the programmed time delay.

When the power has been out for greater than five minutes.

What happens when the Refrigerator/Freezer Guard calls?

- 1 The Refrigerator/Freezer Guard will dial the contact number exactly as it was programmed.
 - ▶ If the contact number was programmed as a pager number (* is the first digit. The Refrigerator/Freezer Guard will dial all digits following the *.
- 2 The Refrigerator/Freezer Guard will wait for a person or voice mail system to answer the call.
- 3 The Refrigerator/Freezer Guard will beep while it waits for a person to stop speaking or the voice mail system's outgoing message to stop.
- 4 For voice contact numbers, the Refrigerator/Freezer Guard will play the recorded personal identification message.
For pager contact numbers, the Refrigerator/Freezer Guard will print the Local Identification number on the pager screen. The Refrigerator/Freezer Guard will then hang up and call the next programmed contact number.
- 5 The Refrigerator/Freezer Guard will report any alarm conditions (i.e. "Warning, Sensor 2, *sensor 2 recorded message*", *is 89 degrees and has been out of limits for, x hours and y minutes*).
- 6 The Refrigerator/Freezer Guard will ask for the PIN number.

Once the PIN number has been entered, the Refrigerator/Freezer Guard will not call again because the current alarm condition has been acknowledged, unless the alarm still exists and the reminder call has been enabled.

If the correct PIN number is not entered within 4 seconds the Refrigerator/Freezer Guard will repeat the warning message. This warning message can be repeated up to 2 times by changing the programmed value. See the **Programming Repeat Warning Messages** section.

If the correct PIN number is not entered the Refrigerator/Freezer Guard will call the next programmed contact telephone number.

If the Refrigerator/Freezer Guard has called all programmed contact numbers without having the correct PIN number entered, it will wait 20 minutes and repeat the sequence until the alarm condition goes away or the Refrig-

erator/Freezer Guard receives confirmation either locally or remotely.

How can I connect the Refrigerator/Freezer Guard to a Phone Line which has a fax or answering machine connected to it?

Program the Refrigerator/Freezer Guard to answer after one more ring than the other device. This allows the other device to always answer first.

To call and access the Refrigerator/Freezer Guard

1. Dial the phone number
2. Hang up one ring before the other device answers.
3. Wait no longer than 30 seconds, then dial the phone number again.
4. The Refrigerator/Freezer Guard will answer.

For Example:

A fax machine on the same line as the Refrigerator/Freezer Guard is set to answer after 4 rings. The Refrigerator/Freezer Guard is programmed to answer after 5 rings. To access the Refrigerator/Freezer Guard, dial the number, let it ring three times, then hang up. Wait 20 seconds and call again. After two rings, the Refrigerator/Freezer Guard will answer.

Verifying telephone communication

To verify telephone communications, perform the following test.

- 1 Using another phone line, call the Refrigerator/Freezer Guard and verify that it answers the phone.
- 2 Verify at least one programmed telephone number.
- 3 Hang up.
- 4 Call the Refrigerator/Freezer Guard again.

Troubleshooting

- 5 Enter #999 for the PIN.
- 6 Hang up.
- 7 The Refrigerator/Freezer Guard will perform a test call to your programmed telephone number's.
 - ▶ Do not enter your PIN if you would like the Refrigerator/Freezer Guard to continue calling any remaining programmed telephone numbers.
- 8 Watch the display and note any messages present.

If the Refrigerator/Freezer Guard does not answer the phone

Verify that the phone line is a standard analog telephone line. Digital phone lines are not compatible with the Refrigerator/Freezer Guard.

Verify that the phone line is working. Connect a standard phone to the line intended for the Refrigerator/Freezer Guard. Verify that there is a dial tone. Check that the phone line is plugged in securely.

Verify that the Refrigerator/Freezer Guard is powered up and some data is being displayed on the display.

If the Refrigerator/Freezer Guard does not call out

Perform the telephone communication verification procedure. Connect a phone to the line intended for the Refrigerator/Freezer Guard. Verify that there is a dial tone.

Check that the phone line is plugged in securely

Verify that the Refrigerator/Freezer Guard is powered up and the status light is blinking

Verify that the Refrigerator/Freezer Guard is programmed correctly. Call up the Refrigerator/Freezer Guard and verify the programmed phone numbers and limits.

Optional 20 / 30 Hour Extended Batteries

If your unit has been ordered with an extended battery, it is installed at the factory.

Standard 4 hour / 20 / 30 Hour Batteries

The rechargeable batteries used in the Refrigerator/Freezer Guard are trickle charged and can take up to a week to reach full capacity. The batteries are charging whenever the monitor is powered on.

FCC PART 68 INFORMATION

This equipment complies with Part 68 of the FCC Rules. The FCC Part 68 Label is located on the bottom of the unit. This label contains the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, this information must be provided to your telephone company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

Connection to the telephone network should be made by using standard modular telephone jacks, type RJ11. The plug and/or jacks used must comply with FCC Part 68 rules. If this telephone equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance in order for you to make necessary modifications to maintain uninterrupted service.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to tariffs.

If trouble is experienced with this unit, for repair or warranty information, please contact customer service at the address and phone listed below. If the equipment is causing harm to the network, the telephone company may request that you disconnect the equipment until the problem is resolved.

DO NOT DISASSEMBLE THIS EQUIPMENT. It does not contain any user serviceable components.

Limited Warranty:

1. Warrantor: Dealer, Distributor, Retailer, and Manufacturer
2. Warranty and Remedy

We believe that this is a high quality product. Although we test all products for proper functionality, we cannot guaranty that there will never be a defective unit, or that a unit will function on every phone line and all communication equipment in existence. For this reason, 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.** If this warranty is unacceptable please return the unused Product for a full refund.

One Year Limited Warranty - Microtechnologies warrants its products to be free from defects in material and workmanship under normal use for one year, and is not responsible for consequential damage or installation costs of any nature. In event that the Product does not conform to this Warranty at any time during the period of one year from original purchase date, Warrantor will repair the defect and return it to you at no charge. **Important: The Warranty is limited to replacement of the Product ONLY.** Secondly, because every phone line differs, we strongly encourage you to test this Product in its actual application. This should include a full test, involving the Product actually dialing to its designated location and someone verifying the proper response.

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

WARRANTORS' OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT ONLY. THIS WARRANTY DOES NOT COVER PAYMENT OR PROVIDE FOR THE REIMBURSEMENT OF PAYMENT FOR 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 or use of this Product, or its failure to operate in the manner in which it is designed. The Warrantor's liability, if any, shall be limited to the original cost of the Product only. Use of this Product is at your own risk.

3. Procedures for obtaining performance for 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. If in any way you are not comfortable with the product or its Limited Warranty, we encourage you to return it unused for a full refund.

Microtechnologies, Inc.
564 Berlin Turnpike
Berlin, CT 06037
1-860-829-2710 ph
1-860-829-2712 fax
www.TemperatureGuard.com
sales@TemperatureGuard.com