



***USER'S MANUAL***  
***VERSION 3.2***

Every effort has been made to ensure that the information in this document is complete, accurate and up-to-date. Sensaphone assumes no responsibility for the results of errors beyond its control. Sensaphone also cannot guarantee that changes in equipment made by other manufacturers, and referred to in this manual, will not affect the applicability of the information in this manual.

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Written and produced by Sensaphone

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Sensaphone

901 Tryens Road

Aston, PA 19014

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## **HAZARDOUS LOCATION SAFETY REQUIREMENTS**

This product has been tested and found to be compliant for use in Hazardous Locations defined as Class I, Division 1, Groups A-D T4  
The NRTL file number for the SAT4D is E113371.



### **WARNING**

EXPLOSION HAZARD – BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT- RISQUE D'EXPLOSION –AFIN D'ÉVITER TOUT RISQUE D'EXPLOSION, S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX AVANT DE CHANGER LA BATTERIE.



### **WARNING**

EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS

AVERTISSEMENT - RISQUE D'EXPLOSION - AVANT DE DÉCONNECTER L'ÉQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX

## **FCC STATEMENT**

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

If you experience trouble with the SAT4D, or you need information on obtaining service or repairs, please contact:

Sensaphone

901 Tryens Road

Aston, PA 19014

Phone: 610.558.2700

FAX: 610.558.0222

## 1 YEAR LIMITED WARRANTY

PLEASE READ THIS WARRANTY CAREFULLY BEFORE USING THE PRODUCT.

THIS LIMITED WARRANTY CONTAINS SENSAPHONE'S STANDARD TERMS AND CONDITIONS. WHERE PERMITTED BY THE APPLICABLE LAW, BY KEEPING YOUR SENSAPHONE PRODUCT BEYOND THIRTY (30) DAYS AFTER THE DATE OF DELIVERY, YOU FULLY ACCEPT THE TERMS AND CONDITIONS SET FORTH IN THIS LIMITED WARRANTY.

IN ADDITION, WHERE PERMITTED BY THE APPLICABLE LAW, YOUR INSTALLATION AND/OR USE OF THE PRODUCT CONSTITUTES FULL ACCEPTANCE OF THE TERMS AND CONDITIONS OF THIS LIMITED WARRANTY (HEREINAFTER REFERRED TO AS "LIMITED WARRANTY OR WARRANTY"). IF YOU DO NOT AGREE TO THE TERMS AND CONDITIONS THIS WARRANTY, INCLUDING ANY LIMITATIONS OF WARRANTY, INDEMNIFICATION TERMS OR LIMITATION OF LIABILITY, THEN YOU SHOULD NOT USE THE PRODUCT AND SHOULD RETURN IT TO THE SELLER FOR A REFUND OF THE PURCHASE PRICE. THE LAW MAY VARY BY JURISDICTION AS TO THE APPLICABILITY OF YOUR INSTALLATION OR USE ACTUALLY CONSTITUTING ACCEPTANCE OF THE TERMS AND CONDITIONS HEREIN AND AS TO THE APPLICABILITY OF ANY LIMITATION OF WARRANTY, INDEMNIFICATION TERMS OR LIMITATIONS OF LIABILITY.

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EXCLUSIVE WARRANTY: THE LIMITED WARRANTY OR WARRANTIES DESCRIBED HEREIN CONSTITUTE THE SOLE WARRANTY OR WARRANTIES TO THE PURCHASER. ALL IMPLIED WARRANTIES ARE EXPRESSLY DISCLAIMED, INCLUDING: THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR USE AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND THE WARRANTY OF NON-INFRINGEMENT AND/OR ANY WARRANTY ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IT MUST BE CLEAR THAT THE WARRANTORS ARE NOT INSURING YOUR PREMISES OR BUSINESS OR GUARANTEEING THAT THERE WILL NOT BE DAMAGE TO YOUR PERSON OR PROPERTY OR BUSINESS IF YOU USE THIS PRODUCT. YOU SHOULD MAINTAIN INSURANCE COVERAGE SUFFICIENT TO PROVIDE COMPENSATION FOR ANY LOSS, DAMAGE, OR EXPENSE THAT MAY ARISE IN CONNECTION WITH THE USE OF PRODUCTS OR SERVICES, EVEN IF CAUSED BY WARRANTORS' NEGLIGENCE. THE

WARRANTORS ASSUME NO LIABILITY FOR INSTALLATION OF THE PRODUCT AND/OR INTERRUPTIONS OF THE SERVICE DUE TO STRIKES, RIOTS, FLOODS, FIRE, AND/OR ANY CAUSE BEYOND SELLER'S CONTROL, FURTHER SUBJECT TO THE LIMITATIONS EXPRESSED IN ANY LICENSE AGREEMENT OR OTHER AGREEMENT PROVIDED BY WARRANTORS TO PURCHASER.

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**4. PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY:** IN THE EVENT THAT THE PRODUCT DOES NOT CONFORM TO THIS WARRANTY, THE PRODUCT SHOULD BE SHIPPED OR DELIVERED FREIGHT PREPAID TO A WARRANTOR WITH EVIDENCE OF ORIGINAL PURCHASE.

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**6. CHOICE OF FORUM AND CHOICE OF LAW:** IN THE EVENT THAT A DISPUTE ARISES OUT OF OR IN CONNECTION WITH THIS LIMITED WARRANTY, THEN ANY CLAIMS OR SUITS OF ANY KIND CONCERNING SUCH DISPUTES SHALL ONLY AND EXCLUSIVELY BE BROUGHT IN EITHER THE COURT OF COMMON PLEAS OF DELAWARE COUNTY, PENNSYLVANIA OR THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

REGARDLESS OF THE PLACE OF CONTRACTING OR PERFORMANCE, THIS LIMITED WARRANTY AND ALL QUESTIONS RELATING TO ITS VALIDITY, INTERPRETATION, PERFORMANCE AND ENFORCEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF DELAWARE, WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW.

Effective date 05/01/2009

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# CHAPTER 1: INTRODUCTION

Congratulations on your purchase of the SAT4D by Sensaphone.

The SAT4D Satellite-based monitoring device is designed to provide alarm notification without the need for a telephone line or cellular plan. The SAT4D uses the Globalstar constellation of 40 Low Earth Orbiting (LEO) satellites which pick up signals from over 80% of the Earth's surface. This includes 100% coverage of the contiguous United States and most of Alaska. The SAT4D is a completely self-contained, self-powered device and includes GPS technology to identify its location. You can even check the status and review alarm history on the Sensaphone SAT4D website. The unit has four dry contact inputs which can be configured for Normally Open or Normally Closed operation with four selectable alarm recognition times. When an alarm condition occurs the SAT4D can contact up to 8 people using its synthesized voice technology and can also send up to six e-mail or text messages. The SAT4D will send a status report twice a day to the website which includes the status of its four inputs and its location. On the website you can monitor the status of one or more units and view the exact location of your device using map technology provided by Google™.

To use the SAT4D the only requirement is that the Satellite transmitter have a clear, unobstructed view of the sky. To make mounting the device easier a pole mount kit is available. The kit includes two poles and mounting hardware that allows you to install the device anywhere, as long as you can drive the pole three feet into the ground (see the installation section for details).

Activation of a SAT4D Communications plan is required. The plan includes voice & e-mail alarm message delivery, two status reports per day, and a website account. See the sign-up form included in the box or contact Sensaphone Sales for activation information.

## SUMMARY OF FEATURES

- Virtually unlimited coverage area utilizing satellite technology
- Self-contained - no power supply required, runs on (5) AA lithium batteries.

- 4 Dry Contact Inputs configurable as Normally Open or Normally Closed
- Alarm message delivery to 8 Voice telephone numbers and 6 e-mail or text messages.
- Two status reports per day sent to website
- Status and alarm history available on website
- Device location provided using GPS technology
- Mounting kit available (optional)

## **TECHNICAL SUPPORT**

This User's Manual will help you install and understand the operation of the SAT4D. Be sure to read it completely before beginning the installation process. If there are any questions or problems that arise upon installation or operation, please contact our Technical Support team at:

SENSAPHONE®

901 Tryens Road

Aston, PA 19014

Phone: 610.558.2700

FAX: 610.558.0222

[support@sensaphone.com](mailto:support@sensaphone.com)

## CHAPTER 2: INSTALLATION

The SAT4D consists of an Input board and Satellite transmitter mounted in a NEMA 4X enclosure. (See Figure below):



- 1) Satellite transmitter
- 2) Transmitter mounting bracket
- 3) Communication cable
- 4) Input board
- 5) Input wiring terminals

### BATTERY INSTALLATION

The SAT4D includes (4) AA 1.5V Lithium batteries which must be installed into the Satellite Transmitter. Loosen the thumb screw and lift the bracket holding the transmitter in place. Slide out the transmitter. Disconnect the communication cable from the end of the Transmitter. Remove the battery compartment lid by loosening the (8) large flat-head screws. Install the four 1.5V AA Lithium batteries and reattach the lid. Connect the communication cable by lining up the arrows and secure the transmitter in the enclosure with bracket and thumb screw..



### ENCLOSURE MOUNTING

The SAT4D enclosure must be mounted so that it has a clear, unobstructed view of the sky. DO NOT mount the enclosure on its side, against the side of a building, or under a tree. These will all interfere with the unit's ability to communicate with the satellite. The device must be mounted in an open area with a clear view of

the sky at up to a 45 degree angle in all directions. An optional pole kit is available for this purpose (Part # FGD-SAT4D-PKIT).

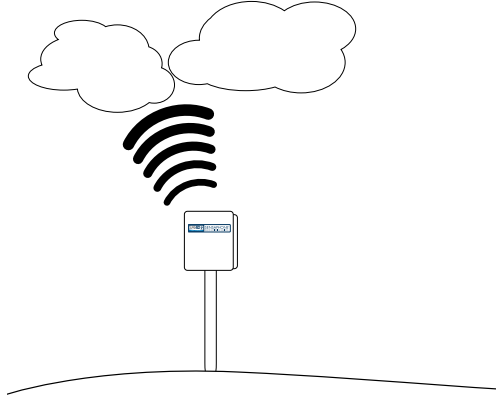
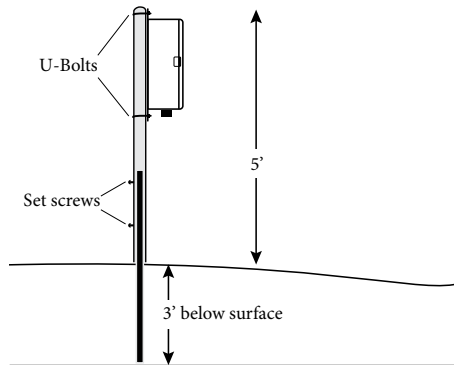


Fig 1. SAT4D Mounting Location .

### **INSTALLATION USING THE POLE KIT (OPTIONAL)**

- 1) Locate an area where you will be installing the SAT4D. Make sure you can drive a pipe at least 3' into the ground without disturbing any electrical wires, gas pipes, water pipes, telephone or cable wires, etc... You may need to contact your local utilities beforehand.
- 2) Loosen the two set screws and remove the 1" pipe from the inside of the 2" pipe. Drive the 1" pipe three feet into the ground.
- 3) Slide the 2" pipe over the 1" pipe and tighten the two set screws.
- 4) Attach the NEMA-4X enclosure to the top of the pipe using the 2 U-Bolts (see figure).

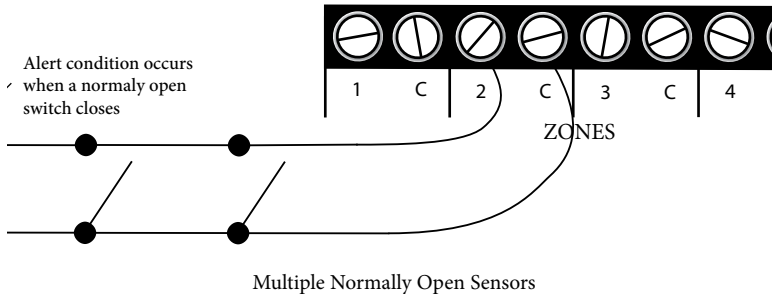


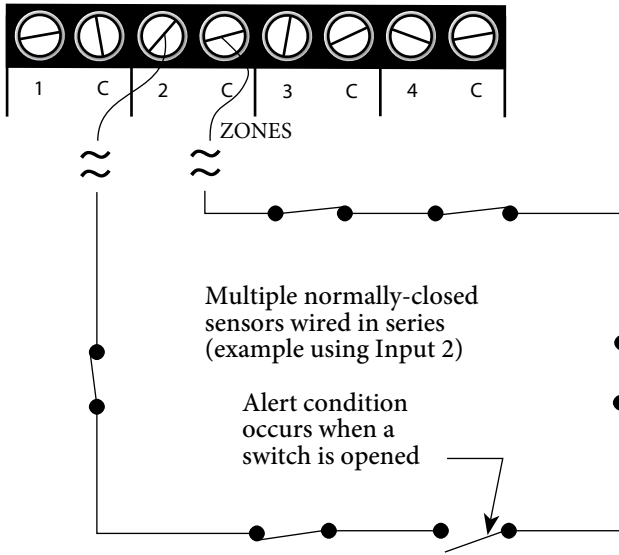
## ZONE INPUT WIRING

The SAT4D has 4 Zone Inputs that are compatible with dry contact sensors/outputs configured as either Normally Open or Normally Closed. A dry contact is any open or closed circuit that has no voltage applied (such as a relay or switch). The SAT4D will sense when the circuit changes from closed to open or vice-versa and then act accordingly.

**WARNING:** Do not connect sensors, switches, or relays that supply voltage to the SAT4D Inputs. This can cause permanent damage. Be aware of proximity to other electrical wires or equipment when placing wires that lead from the sensors to the Inputs. Avoid running the wires near electrical equipment that use high voltage or current, such as motors, heavy machinery, etc. This voltage may be inductively coupled into the sensor wiring and could result in false alarms or damage to the SAT4D's circuitry. Try to place wires at least 6 inches from other electrical wiring.

Select a Zone Input to connect your sensor and wire it up to the corresponding numbered terminal and adjacent Common "C" terminal. Note that multiple Normally Open sensors may be connected to the same zone input in parallel and multiple Normally Closed sensors may be connected in series. See figures below:





Multiple Normally Closed Sensors

## CONFIGURING THE INPUT NORMALITY

Each Zone Input must be configured as either Normally Open or Normally Closed. The default setting is Normally Open. There is a DIP switch for each zone input to select the proper normality. When the switch is in the OFF position the zone is configured as Normally open, when in the ON position it is configured as Normally Closed. Be sure to set each switch to the proper position.

	Chan 1	Chan 2	Chan 3	Chan 4
NO/NC	NO/NC	NO/NC	NO/NC	NO/NC
1A	2A	3A	4A	
1B	2B	3B	4B	
ON	■	■	■	■
OFF	□	□	□	□
	Zone 1	Zone 2	Zone 3	Zone 4
	N.O.	N.C.	N.O.	N.O.
	3 Sec	5 Min	1 Min	10 Min

Sample DIP Switch Settings



## CONFIGURING THE ALARM RECOGNITION TIME

Set the Alarm Recognition Time for each zone input by setting the DIP Switches according to the table below.




	Switch A	Switch B
3 seconds	Off	Off
1 minute	Off	On
5 minutes	On	Off
10 minutes	On	On

## TESTING THE SYSTEM

Check that all equipment being monitored is operating normally and press the *Alarm Status* pushbutton. All 4 LEDs should light up green. If an input is in an Alarm condition and has met the recognition time the LED will light up red. Verify that the LEDs display correctly under both Normal and Alarm conditions. Make and hold an alarm to test the alarm delivery process. You must maintain the alarm condition until all telephone calls have been received. Once the alarm clears, the dial-out process is cancelled.

# CHAPTER 3: SYSTEM PROGRAMMING

The SAT4D requires minimal programming which makes it very easy to use. Included with the device is a SAT4D Service Registration Sheet and Customer Service Agreement which must be filled-out and sent to Sensaphone via fax, email or US mail along with your payment for the first year's wireless service contract. Upon receipt we will activate your SAT4D and create your user account on the SAT4D website so that you can begin programming your input names and alarm notification information. The website address is [www.sat4d.com](http://www.sat4d.com).

 		
<b>Service Plan Registration</b> Before you can install the SAT4D and take advantage of satellite based monitoring, you must first activate a one year service plan. All plans are billed for the full plan term at time of activation. You'll be contacted for service renewal before your plan term expires. Please indicate below the contact person for service renewal. To activate your SAT4D, fill out this form and send to Sensaphone via fax, <a href="mailto:register@sensaphone.com">register@sensaphone.com</a> , or U.S. mail. This form must be received to activate your unit. Please allow 24 hours for activation. Visit <a href="http://www.sat4d.com">www.sat4d.com</a> to access your SAT4D device.		
<b>Service Registration</b> (All fields are required)	<b>Payment Method</b> If you have not yet purchased your wireless service, please fill out the payment information below. <b>FGD-SAT1Y one year service plan . . . \$420</b> <input type="checkbox"/> Discover <input type="checkbox"/> AMEX <input type="checkbox"/> MC <input type="checkbox"/> VISA <input type="checkbox"/> Check or Money Order Enclosed (Payable to Sensaphone) <input type="checkbox"/> Purchase Order # _____ Credit Card # _____ Security Code (found on back of card) _____ Expiration _____ Name as it appears on credit card _____ Billing Address _____ City, State, Zip _____ Telephone Number _____ E-Mail Address _____ Company Name _____ <input type="checkbox"/> <b>This is the contact person for service renewal.</b>	
*SAT4D Serial Number _____ *Company Name _____ *Address _____ *City, State, Zip _____ *Name of Contact Person _____ *Telephone Number _____ *Fax Number: _____ *E-Mail Address (Required for website login) _____ *SAT4D Website Password (case sensitive) _____ <input type="checkbox"/> <b>This is the contact person for service renewal.</b>	* Please note that while there is no activation fee, there is a re-activation fee if service is cancelled and then re-activated. SENSAPHONE® • 901 Tryons Road • Abton, PA • 19014 • PH: 877.373.2700 • F: 610.558.0222 • <a href="http://www.sensaphone.com">www.sensaphone.com</a>	

The website allows you to view Status and Alarm Messages, as well as program your device. Once you have logged-in, select your unit's serial number from the list. You will be presented with a map showing the location of your device with a list of time-stamped Status and/or Alarm messages. To program your input names and contact information, click where it says "*Edit Programming*". Fill-in the appropriate information for your unit and click "*Save Settings*".

If you'd like to have alarm messages (SMS) sent to your cell phone, enter your telephone number along with the appropriate e-mail suffix for your carrier (shown below) into one of the six e-mail address programming fields.

Cellular carrier e-mail address formats:

AT&T Wireless/Cingular . . .	cellnumber@txt.att.net
AllTel Wireless . . . . .	cellnumber@message.alltel.com
Boost Mobile . . . . .	cellnumber@myboostmobile.com
Metro PCS. . . . .	cellnumber@mymetropcs.com
Quest Wireless . . . . .	cellnumber@qwestmp.com
Rogers Wireless. . . . .	cellnumber@pcs.rogers.com
Sprint (Nextel) . . . . .	cellnumber@page.nextel.com
Sprint (PCS). . . . .	cellnumber@messaging.sprintpcs.com
T-Mobile . . . . .	cellnumber@tmomail.net
US Cellular . . . . .	cellnumber@email.uscc.net
Verizon Wireless . . . . .	cellnumber@vtext.com

## CHAPTER 4: OPERATION

### SATELLITE COMMUNICATION AND ALARMS

When an alarm is detected the SAT4D will transmit the alarm message multiple times to the Satellite. The time between transmit attempts will vary randomly between 5 and 10 minutes to ensure that the message is received. Note that the status of all inputs will be updated on the website whenever an alarm occurs, therefore it is highly recommended that you check the website to view the status of all inputs, whenever an alarm message is received.

### VIEWING YOUR UNIT ACTIVITY ON THE WEBSITE

The SAT4D will transmit its status twice a day to [www.sat4d.com](http://www.sat4d.com). The status includes the present alarm condition of each input and the GPS location. You can check the status by going to the website ([www.sat4d.com](http://www.sat4d.com)). Then enter your username and password, and click OK. A sample screen is shown below:

The screenshot shows the Sensaphone Remote Monitoring Solutions website. At the top, it says "Welcome Sensaphone Inc, you are logged in!". Below this is a navigation bar with links for "Home", "About Us", "Contact Us", "Support", and "Help". The main content area features a map of North America with numerous blue and red pins indicating unit locations. Below the map is a table listing unit activity.

Unit Name	Serial No.	Description	Alarm No.	Total Messages	Status	Last Message
Sensaphone Test 1	010000	Sensaphone Factory	00.00	1040	ALARM	2012/12/24 11:29 AM EDT
Sensaphone Test 2	010000	Sensaphone Factory	00.00	1040	ALARM	2012/12/24 02:05 PM EDT

Showing 3 of 2 of 2 items (Showing first 2 items)

This page lists all units associated with your account. The page also includes the unit name, serial number, description, battery condi-

tion, total number of messages transmitted, the present status (OK or Alarm), and the date/time of the last message sent.


To view the message history and unit location information for a particular SAT4D device, click on the Unit Name or Serial Number.

Welcome Sensaphone Inc, you are logged in!

[View Alarm](#) | [Units Alarm](#) | [Transfer Device](#) | [Configure Groups](#) | [Assign Groups](#) | [Home](#) | [Logout](#)

You are viewing alerts for 0-1234997 - Sensaphone Test

[SB: Programming - Map On / Off](#)



Alarm History | Status History | Notification History

Show 50 entries Search:

Message Time	Smoke	Water	Fire	Alt
2012/10/12 02:06 AM EDT	ALARM	OK	ALARM	ALARM
2012/10/12 02:06 AM EDT	ALARM	CLEARED	ALARM	OK
2012/10/12 02:06 AM EDT	ALARM	ALARM	ALARM	OK
2012/10/12 02:06 AM EDT	CLEARED	ALARM	ALARM	OK
2012/10/13 03:57 PM EDT	ALARM	ALARM	OK	OK

The Map page shows the location of the SAT4D and all messages received from it. Each message includes the date and time the message was sent and the status of each of the zone inputs (OK, Alarm, or Cleared). Note that a *Cleared* message means that the input has changed from the Alarm state to a Normal (or cleared) state. The default map location will be that of the most recent GPS data sent in the latest Status update. Note that the GPS location information is not included with alarm messages.

## **BATTERY INFORMATION**

The Satellite transmitter operates from (4) 1.5V AA lithium batteries which will last 3+ years. The Input board uses a single 3.6V AA Lithium battery (special) that will last 7+ years. The SAT4D website indicates the battery condition of the Satellite Transmitter. There are only two battery states: "OK" or "Replace". When the battery status changes to "Replace" the SAT4D can send roughly 100 more messages. If programmed on the SAT4D website, you will get a warning message via email when the batteries in the Satellite transmitter need to be replaced. The battery in the Input Board can be replaced less often - it is recommended you change this battery every other time you replace the Transmitter batteries.

Satellite Transmitter Batteries: (4) 1.5V AA Lithium (e.g. Energizer Ultimate Lithium)

Input Board Battery: (1) 3.6V AA Lithium Battery (e.g. Tadiran TL-2100/S)

\* *Replacement batteries are available from Sensaphone.*

## **ALARM MESSAGE DELIVERY**

The SAT4D will make several transmit attempts to the satellite to ensure that the message gets delivered. It must do this because the satellite is always moving and may not necessarily be overhead on the first attempt - thus the reason for making several attempts. It can take up to 30 minutes (worst case) for a transmission to be successful (although most of the time it will be within 10 minutes). The SAT4D will provide an "alarm" message when the input goes into alarm and it will also provide an "OK" message (e-mail & text only) when the input goes back to Normal. The alarm delivery system is configured to ignore duplicate messages. In the event that the input does not remain in alarm long enough for the original alarm message to be received by the satellite, then it is quite possible that the subsequent transmit attempt by the SAT4D will only be the "OK" message, indicating that conditions have returned to normal. As a result, you will not receive any voice alarm telephone calls but you will receive an e-mail or text message indicating that the input is now "OK".

Note that all e-mail and text messages will be sent out simultaneously as soon as the alarm is received at the SAT4D website. Voice calls, will be made one at a time. Up to three call attempts will be made per user.

For test purposes be sure to hold the input in an alarm condition until all e-mail & voice messages have been delivered. Once the SAT4D website receives an “OK” message from the unit, all remaining voice telephone calls will be canceled.

## **SAMPLE ALARM MESSAGES**

The SAT4D can send alarm messages using both voice telephone calls and e-mail or text messages. Up to 8 voice calls can be made and up to 6 e-mail/text messages. All contact information must be entered on the Sat4D website\*.

\*The voice and e-mail alarm messages will utilize the programming you’ve provided to deliver the alarm message. In the example below, the unit has been programmed with the following information:

SAT4D Unit Name: “Oak Street Treatment Plant”

Input #1: “Pump Trouble”

After listening to the spoken alarm message you have two options:

Press 222 to pass the alarm to the next contact person on the list.

Press 555 to cancel the alarm - in which case it will stop the dialout process.

If the system does not receive a response it will continue to call the next person on the list.

## PROGRAMMING CHANGES

On the SAT4D website, simply click on the link to “*Edit Programming*” from the top of the Map page and you can change most of the SAT4D’s configuration details. Simply make your changes and click on the *Save Setting* button at the bottom of the page.

**SENSAPHONE®**  
REMOTE MONITORING SOLUTIONS

**SAT4D™**  
100% COVERAGE

Welcome Sensaphone Inc, you are logged in!

[View Status](#) | [View Alerts](#) | [View Log](#) | [View Reports](#) | [View Data](#) | [View Settings](#) | [View Device](#) | [Home](#) | [Logout](#)

**Configure device ESN 0-1274997**

**Device:** ESN:  **Description:**  **Zone:**

Automatically adjust DST

Use Group to apply to Device:

Phone Numbers		Email Addresses	
Name 1: <input type="text" value="John"/>	Phone 1: <input type="text" value="(555) 555-5555"/>	Name 1: <input type="text" value="John"/>	Email 1: <input type="text" value="johnd@sensaphone.com"/>
Name 2: <input type="text" value="John"/>	Phone 2: <input type="text" value="(772) 772-7700"/>	Name 2: <input type="text" value="John Smith"/>	Email 2: <input type="text" value="John@sensaphone.com"/>
Name 3: <input type="text" value="Ed"/>	Phone 3: <input type="text" value="(341) 333-3333"/>	Name 3: <input type="text" value="Ed Cox"/>	Email 3: <input type="text" value="Ed@333-3333"/>
Name 4: <input type="text" value="David O'Neil"/>	Phone 4: <input type="text" value="(813) 813-8133"/>	Name 4: <input type="text" value="David O'Neil"/>	Email 4: <input type="text" value="david@813-8133"/>
Name 5: <input type="text"/>	Phone 5: <input type="text"/>	Name 5: <input type="text"/>	Email 5: <input type="text"/>
Name 6: <input type="text"/>	Phone 6: <input type="text"/>	Name 6: <input type="text"/>	Email 6: <input type="text"/>
Name 7: <input type="text"/>	Phone 7: <input type="text"/>	Name 7: <input type="text"/>	Email 7: <input type="text"/>
Name 8: <input type="text"/>	Phone 8: <input type="text"/>	Name 8: <input type="text"/>	Email 8: <input type="text"/>
<input type="checkbox"/> Use Battery Alarm		<input type="checkbox"/> Use EMail Alarm	
Name: <input type="text"/>	Email: <input type="text"/>	Name: <input type="text"/>	Email: <input type="text"/>



# APPENDIX A: TEST PROCEDURE

We recommend that you periodically test your Sensaphone SAT4D to be sure it is functioning properly. This will ensure that when a problem arises the Sensaphone will be ready to alert the appropriate personnel.

- 1.) Check the SAT4D website weekly to verify the device is sending its daily updates. There should be two entries per day.
- 2.) Periodically create an alarm on each of the four zones by tripping the connected sensors. You must hold the circuit closed (or open depending on the normality) for the duration of the alarm notification process to be sure that all parties receive the alarm message.
- 3.) Allow the unit to contact all programmed users. This will make sure that the Sensaphone is programmed properly. It will also prepare personnel to respond appropriately when they receive a message from the SAT4D.
- 4.) Keep a log of your tests, noting the date and whether the SAT4D passed in each category tested. An example of such a log is shown below. (See “Test Log” at the end of this manual.)

SAT4D Test Log							
Date	Inputs		Alarm		Battery		
07/19/09	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	<b>Bob H</b>
08/20/09	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	<b>Alex G.</b>
09/19/09	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>	<b>Bob H.</b>
	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	
	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>	

Test Log Sample

If you require assistance, call Sensaphone Technical Support at 610-558-2700.

## **APPENDIX B: ACCESSORIES**

The sensors listed below are available from Sensaphone and represent the most commonly used devices. Other dry contact sensors, designed for more specialized applications, may also be used. Commercial or industrial electrical supply houses can provide devices to monitor virtually any condition. For further information, contact Sensaphone Customer Service at 610-558-2700.

PART #	SENSOR / SWITCH
FGD-0006	Magnetic Reed Switch
FGD-0007	Passive Infra-Red Detector
FGD-0010	50' two-conductor #22AWG shielded cable
FGD-0013	Spot Water Detector
FGD-0022	Temp° Alert
FGD-0027	Humidistat
FGD-0049	Smoke Detector with Built-in Relay
FGD-0054	Power-Out Alert™
FGD-0056	Zone Water Detector w/Water Rope
FGD-0063	Additional 10' Water Rope for FGD-0056
FGD-0205	Multi-Point Wireless I/O System
BAT-0025	3.6V AA Lithium Battery for Input Board
BAT-0031	1.5V AA Lithium Battery for Satellite Transmitter

# **APPENDIX C: SPECIFICATIONS**

## **ALERT ZONES**

Number of Zones: 4

Zone Connector: terminal block

Zone Types: N.O./N.C. Contact

Zone Characteristics: 3.3M $\Omega$  to 2.5V

Zone Protection: 8VDC Metal Oxide Varistor with fast acting diode clamps.

## **LED STATUS INDICATORS**

Number of LEDs: 4

Operation: Active while Alarm Status button is depressed.

Green = OK, RED = Alarm (depending on recognition time).

## **L-BAND RF**

Frequency: 1.615 GHz

Protocol: Simplex

Modulation: Direct Sequence Spread Spectrum (DSSS)

Maximum Tx Power: +22 dBm EIRP

Antenna: Internal ceramic patch

## **SATELLITE TRANSMITTER BATTERY**

Battery Type: 1.5V AA Lithium.

Battery Life: 3+ years depending on transmit activity & temperature.

## **INPUT MODULE BATTERY**

Battery Type: Long life lithium 3.6V AA (Tadiran # TL2100/S).

Battery Life: 3+ years depending on temperature

## **ENVIRONMENTAL**

Operating Temperature: -22° to 140°F (-30° to 60° C) Normal, -40° to 185°F (-40° to 85° C) with battery life impact

## **PHYSICAL**

Enclosure Dimensions: 11.3”(w) x 13.3”(l) x 5.6”(h)  
28.7 x 33.7 x 14.22cm

Enclosure Weight: 7lbs (3.7kg)

Enclosure Specifications: NEMA 4X, UL508, IEC529, IP66  
CSA C22.2 No. 94

## **APPROVALS**

UL 913, 5th edition: Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, and III, Division 1, Hazardous (Classified)Locations

CSA C22.2 No. 157-92-CAN/CSA, 1992.06.01 (R 2006)  
Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations - Third Edition

## **APPENDIX D: RETURNING THE UNIT FOR REPAIR**

In the event that the SAT4D does not function properly, we suggest that you do the following:

- 1) Record your observations regarding the SAT4D's malfunction.
- 2) Call the Technical Service Department at 610-558-2700 prior to sending the unit to Sensaphone for repair.

If the unit must be sent to Sensaphone for Servicing, please do the following:

- 1) Disconnect all sensors from the alert zones.
- 2) Carefully pack the unit to avoid damage in transit. Use the original container (if available) or a sturdy shipping box.
- 3) You must include the following information to avoid shipping delays:
  - a) Your name, address and telephone number.
  - b) A note explaining the problem.
- 4) Ship your package to the address below:

SERVICE DEPARTMENT

SENSAPHONE

901 Tryens Road

Aston, PA 19014

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





