

Sensormetrics BoatNanny™

USER GUIDE



boat nanny

Boat security monitoring system

www.theboatnanny.com

The BoatNanny™

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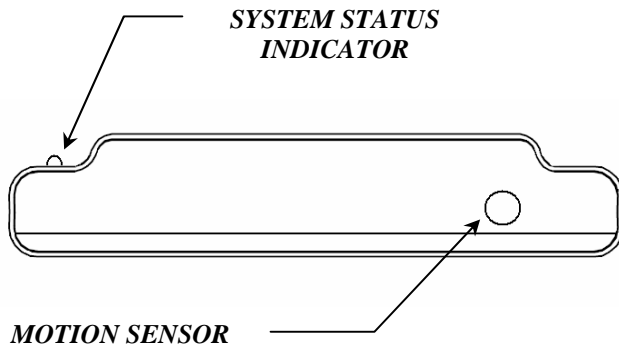
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Introduction

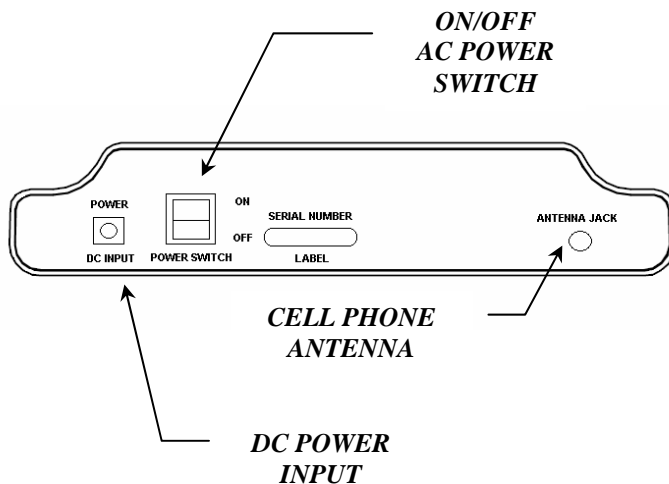
The BoatNanny™ is a Wireless Remote Monitoring System that anyone can install in less than thirty minutes. When an alarm is activated, the system will automatically text message your cell phone and/or send you an email. The BoatNanny™ is a two-piece wireless system; a remote unit in the engine room and a base unit in the boat cabin. Because BoatNanny™ has a built-in GSM cell phone it can be used just about anywhere, and monthly charges are nominal. Simply install and activate a SIM phone card into the base unit and you are “ready to go”. Programming is easy too – just send a text message to the BoatNanny™ with your cell phone or computer and the system does the rest.

Connections – BoatNanny™ (Base Unit Front View)



Base Unit, Remote Unit w/Float Switch

Connections – BoatNanny™ (Base Unit Back View)



Base Unit w/AC Power Adapter

Features

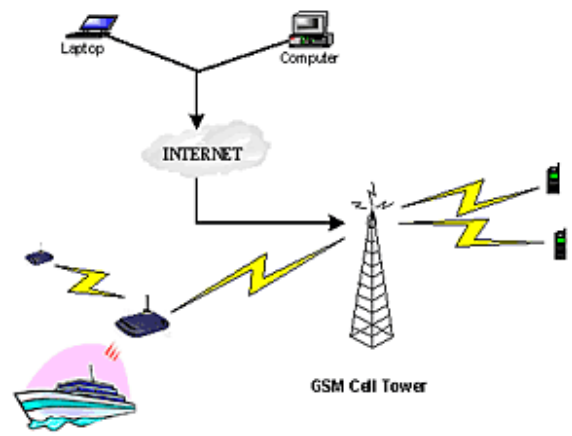
- Alarm Reporting using Cell-Phone Text Messaging
- Choice of Cell-Phone Service Providers and Activation Plans
- Easy Installation and Programming (Does not require wiring)
- Simple Operating Commands
- Operating Status Indicator
- AC or DC Power Input
- Internal Rechargeable Battery Backup Power
- Low Current Consumption (Long Term Battery Operation)
- Nominal Monthly Fees (GSM Cell-Phone Fees Apply, Service Plans Vary)
- Orderable with or without a factory installed Datablaze/T-Mobile GSM Cell-Phone SIM card.
- Portable (Can be easily moved between boats or to monitor non-marine locations)
- Multiple Sensor Types
 1. High Water
 2. Motion/Intruder
 3. High and Low Temperature (Sensed at both Base and Remote)
 4. AC and DC Power
 5. Fire/Smoke Audio Detection (Internal Acoustic Sensor)
 6. Acoustic Monitoring
- Remote Controlled “dry contact” Relay Switch

Use this switch to optionally control devices or systems such as alarms, sirens, lights, HVAC, etc.
- Available in White or Blue
- One Year Warranty

Theory of Operation

How BoatNanny™ Works

The BoatNanny™ is a wireless monitoring/security system for your boat. The system consists of a Base Unit that is powered by AC or 12/24V DC, and a wireless Remote Unit that runs on 2 AA batteries. The Remote Unit is normally mounted in the engine room where it monitors temperature and water level. Communication between the Base Unit and the Remote Unit is via a digital wireless link.



The Base Station, normally placed in the boat cabin, has a passive IR motion sensor, a temperature sensor, an AC/DC voltage sensor to monitor power status, and an acoustic sensor that can continuously listen for smoke and fire alarms. Operation and programming is achieved by simply sending the BoatNanny™ SMS text messages. Basically, there is a cell phone inside the BoatNanny™ base unit that utilizes the GSM (Global System for Mobile communication) digital cellular network. When an alarm condition is detected, the BoatNanny™ alerts by sending you a text or EMAIL message. It is as simple as that.

Note: All command messages sent to the BoatNanny™ must be SMS text messages. Refer to your cell-phone user guide or operating manual for text message sending and receiving instructions. Commands must be sent via text messaging or EMAIL.

How BoatNanny™ Uses the GSM Cell Phone Network

The BoatNanny™ employs the GSM cellular phone network because of its inherent high quality of service and reliability. The BoatNanny™ will operate as long as it is in range of the cellular network, which extends throughout the world. Before the BoatNanny™ can access the cellular network, a GSM network SIM card (Subscriber Information or Identity Module) must be installed and activated. The SIM card contains the subscriber's account information including the BoatNanny's phone number. The card can be obtained from a WEB hosting service such as Datablaze/T-Mobile or directly from a GSM cellular service provider such as T-Mobile or AT&T.

We recommend Datablaze/T-Mobile WEB hosting services since it will make the BoatNanny™ yet even easier to use and access. If this service is activated it will also provide Internet access to alarm notifications, history logs, remote configuration and control, device status and much more using any WEB browser, telephone or connected PDA. Additional information regarding Datablaze/T-Mobile WEB hosting can be found in the enclosed Datablaze/T-Mobile "Activation and Instruction Guide" or on-line at <http://www.datablaze.com>.

A demonstration is available at <https://my.datablaze.com/boatnanny>. To gain access to the demonstration login in as user: nanny with password: demo.

Package Contents

- BoatNanny™ Base Station
- BoatNanny™ Remote Sensor
- Float Switch
- BoatNanny™ Users Guide
- Easy Command Card
- AC Power Adapter (Includes universal plug adapters for various countries and line voltages)
- DC Power Cable
- Cell Phone Antenna
- Remote Sensor and Float Switch Mounting Hardware
- AA Batteries (Required for BoatNanny™ Remote Sensor)

System Requirements

Basic System

- Batteries - 4 each AA Nickel-Cadmium Batteries for Base Unit (Factory Installed)
- 2 each AA Alkaline Batteries required for Remote Sensor (User Installed)
- Cell Phone Activation Card / GSM SIM card (See Cell Phone/SIM Card Activation Requirements)
- 100-240 VAC 50-60 Hz Line Current or 12-24 VDC

Cell Phone/SIM Card Activation Requirements

We recommend activating the Datablaze/T-Mobile SIM card that can be ordered, installed and delivered with your BoatNanny™. A SIM card however can be obtained directly from any GSM cellular service provider such as T-Mobile or AT&T. The SIM card must be a GSM network type. Service plans are available that do not require monthly fees. Pay as you go type plans can be purchased directly from either T-Mobile or AT&T. If you wish to utilize one of these plans then an activated GSM network SIM card must be obtained from any T-Mobile or AT&T store and installed into the BoatNanny™.

T-Mobile <http://www.t-mobile.com>

AT&T <http://www.wireless.att.com>

There are a variety of service plans offering rates as low as a nickel per text message and a quarter per voice call. The Datablaze/T-Mobile WEB hosting plan includes hundreds of text messages for under \$10 per month. Annual service plans are also available for under \$100. Contact your WEB hosting or GSM cellular service provider for additional information.

Installation

There are no wires to run or cables to connect. The BoatNanny™ makes use of wireless technology and has pre-wired sensors. Simply locate the base unit on a tabletop, mount the remote unit in the engine room, wire the float switch and the BoatNanny™ is “ready to go”. This user guide provides step by step instructions from removing the BoatNanny™ out of its shipping box to actually using the text-messaging features of the BoatNanny™.

How to Unpack BoatNanny™

1. Remove the BoatNanny™ Base and Remote Unit from the shipping package.
2. Carefully remove the protective wrapping from the Base Unit, Remote Unit, Float Switch, Power Supply and Antenna.

Note: Retain the packaging material for off-season storage.



How to Install BoatNanny™ (Base Unit)

1. Go directly to step 4 if the GSM SIM card has been factory installed and is ready for activation.
2. Remove the four screws from the bottom side of the base unit using a Philips screwdriver and then remove the top cover while being careful not to disconnect or damage the motion sensor interconnecting cable. Once the cover has been removed, install an activated GSM cell phone SIM card. Orient the SIM card and slide into the socket as pictured on the surrounding circuit board.
3. Install the base unit cover using the four screws again being careful of the motion sensor interconnecting cable. Be very careful not to over tighten the screws.
4. Attach the Cell-Phone antenna to the base unit. Carefully screw the antenna into the antenna jack on the rear panel of the BoatNanny™.

Caution! Do NOT over tighten the antenna or else damage to the antenna and/or antenna jack may result.

Warning! Do NOT operate the base unit without the antenna or else damage to the circuitry may occur

5. Locate the base unit in the boat cabin, and orient the motion sensor lens toward the cabin entrance. For best results do not point the motion sensor directly at the target area.
6. Connect the AC Adapter power cord and plug the AC Adapter into a nearby electrical outlet.

How to Install BoatNanny™ (Remote Unit)

1. Mount the float switch in a location that when activated signifies high water using two #8X3/4 inch pan head stainless steel screws. (Refer to switch manufacturer installation instructions.)

2. Install the batteries into the remote unit. Remove the top cover by removing the four screws located on the backside using a Philips screwdriver. Once the cover has been removed install two (2) AA Alkaline batteries. Re-attach the cover with the four screws after the batteries have been installed. Be careful not to over tighten the screws.



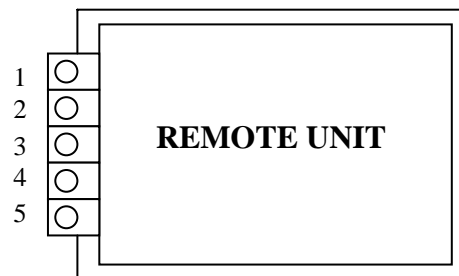
Note: There is no power switch on the remote sensor. Power is automatically applied and the sensors are ready for operation after the batteries have been installed.

3. Wire the high water float switch to the terminal block screw terminals as shown.

Terminal Block Screw Terminal Connections

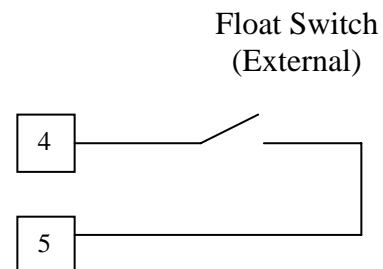
- 1 = Switch Output (SWON)
- 2 = Switch Output (Common)
- 4 = Switch Input
- 5 = Switch Input (Remote Ground)

Relay Contact: 1 AMPERE DC Maximum



Float Switch Wiring Instructions

Connect an external float switch to terminals 4 and 5 on the remote unit.



4. Mount the remote unit to the bulkhead above the high water mark using four #8X5/8 inch pan head stainless steel sheet metal screws or equivalent.

Operating Instructions and Commands

Basic Operating Instructions

- Activate the GSM cellular service, SIM Card, installed in your BoatNanny™. If activating the factory installed T-Mobile SIM card refer to the Datablaze/T-Mobile “Activation and Instruction” Guide for step by step activation instructions.
- Power up the BoatNanny™ by switching ON the main power switch.
- The BoatNanny™ will automatically initialize and connect to the cell phone network. After several seconds the BoatNanny™ enters “Normal Operation Mode” and is ready to accept programming commands.

Note: The status indicator LED will flash green at a fast rate while acquiring cellular service. It will flash green at a slower rate once the BoatNanny™ connects to the cellular network. Wait for the slow flash rate “Normal Operation Mode” before sending commands.

- Command messages consist of 2-digit numbers (letters for “Easy Commands”) followed by the command data. All commands can only be sent to the BoatNanny™ as text messages and cannot be sent by simply calling the BoatNanny™ cell phone number.

The BoatNanny™ is pre-programmed and “ready to go” after SIM card activation except for programming of the desired Text Message Alarm Alerting Number or numbers. These are the phone numbers the BoatNanny™ will call to report the alarms. For basic operation, the BoatNanny™ requires at least one primary phone number to be programmed. In order to program the Primary phone number, a text message containing the digits ‘11’ followed by the actual phone number must be sent to the BoatNanny™. An example of this message is: 115081112222 where 508-111-2222 is the phone number called by the BoatNanny™ to report the alarm. To send the text message using a cell phone use the text messaging feature and enter the BoatNanny™ cell phone number. In the message section enter 11 followed by the number. Some cell phones require conversion from alphabetical (letters) to numerical numbers. (Reference the BoatNanny™ Basic Command List section for additional programming examples.)

Note: Commands can only be sent using SMS text messaging. Refer to the text messaging instructions, “how to send a text message”, in your cell phone users guide to learn how to send text messages.

For easy operation it is recommended that frequent commands like STATUS, OFF, ON, SWON, SWOFF be stored in your cell phone message memory. Refer to your cell phone “user guide” for information and instructions on how to send receive and store a text message.

LED Status Indicator

The LED Indicator displays a visible system status of the BoatNanny™. The LED indicates and displays system status as follows:

- | | |
|---|---------------------------------|
| • Normal Operation | Slow Flashing Green |
| • Acquiring Cellular Network or Cell Phone Fault | Fast Flashing Green |
| • Remote Sensor NOT Responding | Fast Flashing Red |
| • Other Faults | Slow Flashing Red |
| • Acquired Cell Network Waiting for Motion Sensor | Steady Green |
| • Text Message Received | Blink Orange “Quick Flash” |

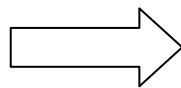
Note: The LED visually indicates basic system operating modes and status. All alarm states and system faults can be determined by sending a STATUS command and viewing the results in the response message.

The order of priority is 1) cell phone, 2) remote not responding, 3) all others. “All other faults” can be determined by sending a STATUS command.

Cell Phone Text Messaging

The BoatNanny™ sends both Alarm and Status messages to your cell phone. Alarm messages indicate failed alarms while status messages display the alarm “OK” or “Fail” state. The alarm descriptions in the messages have been abbreviated so that the message can be easily read on small cellular phone displays. A sensor that has detected a problem will report “Fail” otherwise it will report “OK”. (Reference Alarm Descriptions and Abbreviations) Actual measured voltages and temperatures will be included in the response messages. It is recommended that periodic status requests be issued to the BoatNanny™. Requesting periodic status assures that the BoatNanny™ is operational.

Example:



BoatNanny
Alarm:
Water-Fail

Sep 24, 7:37 pm

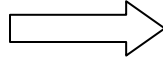
BoatNanny
R Unit-OK
Water-OK
Motion-OK
Sound-OK
AC/DC-12.0V
B Batt-OK
B Temp-68.9F
R Batt-OK
R Temp-67.3F

Sep 24, 7:39 pm

EMAIL Messaging

The BoatNanny™ can also EMAIL Alarm or Status messages. The EMAIL messaging is similar to the text messaging. EMAIL messages will be sent ONLY to the programmed EMAIL Message Alarm Alerting Addresses.

Example:



From: emailfrom@myservice.com
To: emailmessage1@mymail.com
Subject:

BoatNanny
R Unit-OK
Water-OK
Motion-OK
Sound-OK
AC/DC-12.0V
B Batt-OK
B Temp-68.9F
R Batt-OK
R Temp-67.3F

Mobile Email from a Cingular Wireless
Customer <http://www.cingular.com>

INTERNET Programming - Messaging

The BoatNanny™ can be programmed using text-messaging services over the Internet. Text messaging services provided by your service provider work best and is available for use at no additional cost. Command messages can be easily typed and sent to the BoatNanny™ using your computer.

Text messaging services can be found on the Internet at:

- AT&T

AT&T customers can send a text message to other AT&T customers using “My Account. Log into My Account and click on the Go Button in the Phone/Device Box. Scroll down to Send a Text Message.

https://www.wireless.att.com/olam/gotoPhone.olamexecute?event=goToSMS&reportActionEvent=A_PHON_SEND_MSG_SUB

- T-Mobile

T-Mobile customers can also send a text message to other T-Mobile customers. Sending a message is as easy as going to the T-Mobile customer web site and typing in the destination phone number and text message.

https://wmg.tmomail.net/customer_site/jsp/messaging_lo.jsp

Note: The above Internet sites are subject to change by their operators. Other Internet text messaging services are available and can be used.

Alarm Behavior

- “Remote not responding” Alarm – “R Unit-Fail” message is sent when the remote unit fails to respond. An “R Unit-OK” message is sent after communications has been restored. This alarm can be due to temporary external RF interference. The alarm can be DISABLED by sending a “800” command.
- Water Level – “Water-Fail” message is sent when the float switch is CLOSED. The “Water-OK” message is sent when the float switch remains OPEN for more than five seconds.
- Motion Alarm – “Motion-Fail” message is sent when motion is detected. The Motion Sensor is activated 30 seconds after the BoatNanny™ is switched on. The motion sensor de-activates after the first detection and automatically re-activates after one hour. This prevents multiple alarm messages if continuous motion is being detected. “Motion-OK” is the status state when motion is not detected. The status of the motion sensor can be checked anytime using the ‘Status’ command.
- Acoustic Alarm – “Sound-Fail” message is sent when the ambient sound level is above a selected threshold. The acoustic sensor alarm message de-activates after the first detection and automatically re-activates after one hour. This prevents multiple alarm messages if continuous sound is being detected. “Sound-OK” is the status state when sound level is below the selected threshold. During this period the status of the acoustic sensor can still be checked using the ‘Status’ command.
- AC/DC Alarm – “AC/DC-Fail” message is sent when the base unit input voltage is less than 9 Volts. The “AC/DC-OK” message is sent when the input voltage is greater than 10 Volts. This alarm typically indicates a problem with either the boat’s AC power or battery.
- Base Battery Low Alarm – “B Batt-Fail” message is sent when the rechargeable backup battery voltage falls below the nominal operation limit. “B Batt-OK” message is sent if the battery voltage returns to nominal range.
- Remote Battery Low Alarm – “R Batt-Fail” message is sent when the battery voltage falls below the nominal operation limit. “R Batt-OK” message is sent if the battery voltage returns to nominal range. (Replace the batteries if low battery message is received.)
- Temperature Alarms – “B Temp-Fail” or “R Temp-Fail” message is sent when measured base or remote unit temperature goes above or below the user selected Low and High limits. The “Temp-OK” message is sent only when the temperature returns inside five degrees of the thresholds.

- **Message Squelch** - In case of the motion alarm (82) and acoustic alarm (83), a message is immediately sent and will not be re-sent until 60 minutes has passed and if the alarm condition is still present.
- **Daily Status** - A daily status message is automatically sent to just the primary phone number each day at 12 noon. Time is automatically acquired from the cell phone network each time the BoatNanny™ is switched on or each time a message is received. Status messages include actual measured battery voltages and temperatures.
- **Alarm Messages** - Alarm messages are sent to all stored phone numbers and email addresses. An alarm “OK” message is sent when the condition returns to a normal state. The temperature alarm however must return to a temperature five degrees inside of the min/max thresholds before an "OK" message is sent.
- **Relay Switch Mode** – The BoatNanny™ provides a feature to control the relay switch inside the remote unit when motion is detected. For instance a siren or horn could be activated using the relay switch to deter intruders. If this feature is enabled, the relay switch is CLOSED when the Motion Alarm is activated. The switch will automatically OPEN after 2 minutes and will be re-armed after 60 minutes. There is a 30-second delay from the time the motion sensor is activated until the relay switch will close. The “Swon” and “Swoff” commands have priority and can turn on or off the relay switch at any time.
- **Factory Defaults** - The BoatNanny™ can be reset back to factory default settings by simply sending the (91) command message. All phone numbers and settings must be re-entered.

Acoustic Monitoring

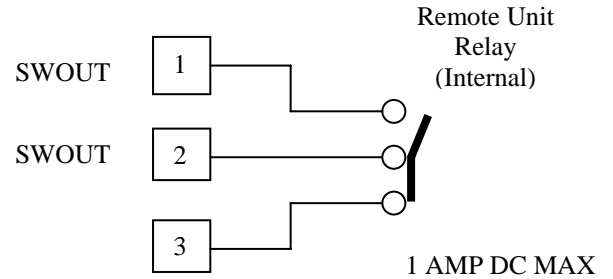
The BoatNanny™ is equipped with the ability to listen to the surrounding sounds. For example, an alarm message will be sent if a loud noise from a smoke or fire alarm is detected. This is a unique feature provided by the BoatNanny™. The acoustic sensor will also allow you to actually “listen-in” to verify detected alarms. To listen, simply call the BoatNanny™. The call will be automatically answered and you will be able to hear the sounds picked up by the internal microphone. There will be an answer tone that will quiet after a few seconds.

Acoustic monitored voice calls are limited to five minutes. The BoatNanny™ will automatically “hang-up” after this period. The acoustic sensitivity level can be adjusted using the ‘Set Acoustic Alarm Sensitivity’ command (75).

Note: Acoustic monitoring uses the standard cellular voice network and is not considered text messaging. Additional phone charges, typically \$0.25 per call per minute, may be assessed when using the acoustic-monitoring feature.

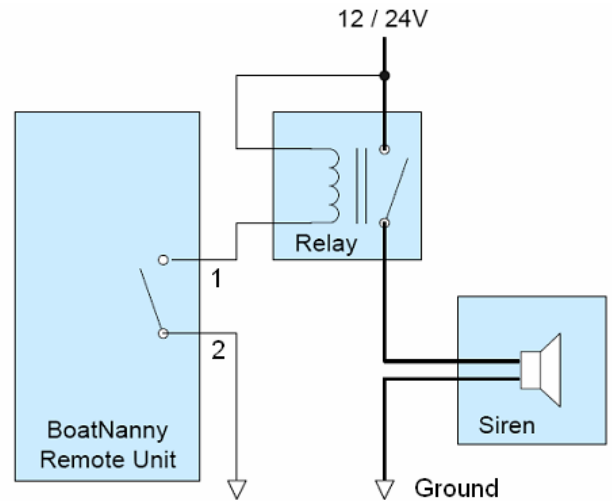
Alarm/Siren Switched Output

The relay switch contacts that are controlled using commands “swon” and “swoff” are wired to terminals 1, 2 and 3. When the system is first powered on the electrical contact is OPEN between terminals 1 and 2 and CLOSED between terminals 2 and 3. The electrical contact is CLOSED between terminals 1 and 2 after the command “swon” is received via SMS text messaging. The contact will open when command “swoff” is received.



Note: The maximum current that can be switched by the internal relay switch is 1 AMPERE.

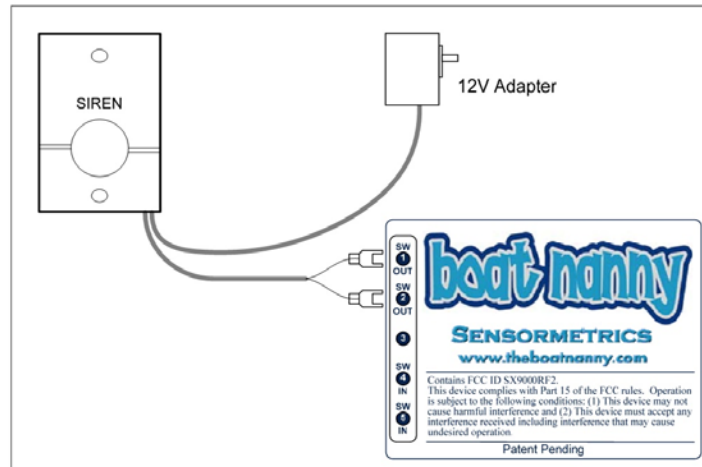
The remote unit relay switch can be wired directly to a variety of devices from alarm lights or sirens to air conditioning units. Although the switch inside the Remote Unit is rated for 1 Ampere, the switch inside of the remote unit can be wired to a second relay switch, for example as shown, that is capable of switching much higher current. This second relay can be wired to most appliances. Care must be taken to assure that all high current wiring (heavy lines) is sized adequately to handle the higher current. Optional components such as alarm lights and sirens are available. Contact the Sensormetrics, Inc. sales team or visit our web site www.theboatnanny.com for more information.



It is important to remember that the BoatNanny™ can be configured to turn on or off the remote unit switch if motion is sensed. Set the Relay Switch Mode to “0” if the switch requires activation or deactivation depending on the state of the motion sensor.

Installation Guide for the BoatNanny Siren Option

1. Connect the Siren to the BoatNanny Remote Unit as shown below. The two wires are interchangeable.
2. Plug the 12V adapter into an AC outlet.
3. Make sure the BoatNanny Base Unit and the Remote Unit are powered on and operational, and then send the command text message (940) to your BoatNanny to put it in Motion Activated Siren Mode.
4. The system is now armed and any motion in the cabin will trigger the siren.



Siren Option Operational Details

During normal operation, the SW OUT pins on the Remote Unit can be opened or closed by sending the command text messages SWOFF and SWON. When the BoatNanny is put in the Motion Activated Siren Mode by sending the 940 command, a motion alarm will also close the Output Switch, which turns the Siren on. There can be up to a 20 second delay between motion detection and Siren activation. Once activated, the Siren remains ON for about 2 minutes and then turns off automatically. After 1 hour, the motion alarm will be armed again.

The BoatNanny can be taken out of Siren Mode by sending the 941 command. Then the Output Switch won't be tied to the motion alarm and can only be opened or closed by SWOFF/SWON commands.

To avoid the siren from going off during installation, it is recommended that you first send the SWOFF command to make sure that the Output Switch is in the OPEN state before the 12V adapter is plugged in. As with any of text message commands, it could take a minute or longer for the command to be implemented, depending on the Cellular network delay. If you want to turn off the siren before the 2 minute timeout, unplug the 12V adapter for about 2 minutes. Do not turn off the Base Unit as that will prevent it from sending an RF signal to turn off the siren after 2 minutes.

BoatNanny™ Testing

To test the BoatNanny™ simply activate the High Water float switch for at least 5 seconds and an alarm High Water “Fail” message will be immediately sent to the programmed primary phone number. A High Water “OK” message will be sent when the float switch has been switched off for at least 5 seconds. If the AC power adapter is briefly unplugged an AC/DC alarm message will be immediately sent.

Note: The speed at which text and EMAIL messages are transmitted is dependent on the service provider’s network. Almost all messages are delivered in just a few seconds but in some cases it may take up to several minutes.

Basic Command List

Text Message Alarm Alerting Number(s)

<i>Command Description</i>	<i>Text Message</i>	<i>Default</i>
Phone Number 1 (Primary)	11 followed by 10 digit phone number	None
Phone Number 2	12 followed by 10 digit phone number	None
Phone Number 3	13 followed by 10 digit phone number	None

Example: 115080000000 Enter the primary cell-phone # 508-000-0000.
 126171112222 Enter the secondary cell-phone # 617-111-2222.
 11 Erase phone #1.

Easy Commands (case insensitive)

<i>Command Description</i>	<i>Text Message</i>
Alarms Off (All Off)	Off
Alarms On (All On)	On (default)
Send status text to phone number 1	Status
Send diagnostic information to phone number 1	Diag
Send list of phone #'s & email addresses stored to phone number 1	List
Send Alarm Settings to phone number 1	Setting
Send saved system settings to phone number 1	System
Switch ON	Swon
Switch OFF	Swoff (default)
Send status to email address number 1	Estatus
Send diagnostic information to email address number 1	Ediag
Send list of saved Phones & Emails to email address number 1	Elist
Send saved alarm settings to email address number 1	Esetting
Send saved system settings to email address number 1	Esystem

Examples: Status (Request a status text message to be sent to the Primary cell-phone #.)
 Status5081234567 (Request a status text message to be sent to 508-123-4567.)

General System Commands

<i>Command Description</i>	<i>Function</i>	<i>Text Message</i>	<i>Default</i>
Set Boat Name		90 followed by name (15 characters or less)	BoatNanny
Set to Factory Defaults		91	
Relay Switch Mode	Normal = 1 Motion Relay/Siren = 0	94 followed by 0 or 1	1

Examples: 90MyBoat1 Change boat name to MyBoat1.
 91 Erase entries and reset all parameters to factory defaults.
 Swon Turn on the switch in the remote unit. Connects terminals 1 and 2.
 Swoff Turn off the switch in the remote unit.

Note: Response text messages can be sent to any 10-digit phone number by simply appending the number to the Status, Diag, List, Setting and System commands.

Response email messages can also be sent to any address by simply appending the address to the Estatus, Ediag, Elist, Esetting and Esystem commands.

Note: The Boat Name must be 15 characters or less. Larger name lengths if entered will be truncated.

Advanced Command List

EMAIL Message Alarm Alerting Addresses

	<i>Text Message</i>	<i>Default</i>
Email Address 1	21 followed by an email address	None
Email Address 2	22 followed by an email address	None
Email Address 3	23 followed by an email address	None

Example: 21jeo@email.com Enter the primary email address joe@email.com.

Message Alarm Alerting Enable or Disable

<i>Command Description</i>	<i>Function</i>	<i>Text Message</i>	<i>Default</i>
Remote Sensor not responding	On=1 Off=0	80 followed by 0 or 1	1
Water Level	On=1 Off=0	81 followed by 0 or 1	1
Motion/Intruder	On=1 Off=0	82 followed by 0 or 1	1
Microphone/ Acoustic Alarm	On=1 Off=0	83 followed by 0 or 1	1
Base Unit AC/DC Power	On=1 Off=0	84 followed by 0 or 1	1
Base Unit Battery	On=1 Off=0	85 followed by 0 or 1	1
Base Unit Temperature	On=1 Off=0	86 followed by 0 or 1	1
Remote Unit Battery	On=1 Off=0	87 followed by 0 or 1	1
Remote Unit Temperature	On=1 Off=0	88 followed by 0 or 1	1

Example: 820 Disable Motion Sensor alarm messages.

“Other” System Commands

<i>Command Description</i>	<i>Range</i>	<i>Text Message</i>	<i>Default</i>
Alarm Base Temp High	0 to 185 (deg F)	70 followed by Temp	120
Alarm Base Temp Low	0 to 185 (deg F)	71 followed by Temp	40
Alarm Remote Temp High	0 to 185 (deg F)	72 followed by Temp	140
Alarm Remote Temp Low	0 to 185 (deg F)	73 followed by Temp	40
Set Motion Sensitivity	0 to 10	74 followed by sensitivity	7
Set Acoustic Alarm Sensitivity	0 to 10	75 followed by sensitivity	8
Save Cell-Phone Number		95 followed by 10 digit number	None
Daily Status Email	On=1 Off=0	96 followed by 0 or 1	1

Example: 72125 Set Remote High Temperature Alarm to 125F. (See note)
 749 Set the Motion Sensor sensitivity. (See note)
 955081234567 Save the system phone number to permanent memory (See note)
 960 Turn off the daily status Email

Note: All temperature measurements are displayed as degrees Fahrenheit.

Note: Motion and Acoustic sensor sensitivity can be increased or decreased. The sensitivity is scaled from zero to ten. A higher number makes the sensor more sensitive.

Note: This is the number used to acquire system time if the cell-phone SIM card is not provisioned with a phone number.

Alarm Descriptions and Abbreviations

- Alarm descriptions are abbreviated in the messages sent so that they can be easily identified on smaller cellular phone displays. BoatNanny™ alarm descriptions and abbreviations are as follows:

Remote Unit	R Unit	No Base to Remote Unit Communications
Water Level	Water	High Water Detection
Motion	Motion	Motion Sensor
Sound	Sound	Acoustic Alarm
AC/DC	AC/DC	Input Power Detection
Base Battery	B Batt	Base Unit Low Battery Detection
Base Temperature	B Temp	Base Unit Temperature
Remote Battery	R Batt	Remote Unit Low Battery Detection
Remote Temperature	R Temp	Remote Unit Temperature

DIS	Disabled
N/A	Not Applicable
F	Degrees Fahrenheit
V	Volts DC

Frequently Asked Questions and Examples

How do I setup the BoatNanny™ for the first time?

The BoatNanny™ for all practical purposes is “ready to go” right out of the box. There are only a few steps that need to be done before it is ready to use. The first step is to activate the factory installed SIM card or obtain and install an activated SIM card from either T-Mobile or AT&T. (When obtaining your own SIM card we recommend that you bring the BoatNanny™ base unit with you to the cell-phone store. If necessary the cell-phone network identification numbers located adjacent to the serial number can be easily obtained.) Next, install the batteries into the remote unit. Then connect the AC Adapter into the base unit, plug it into a standard wall outlet, switch the power switch ON, and wait for the slow flashing GREEN LED. (“Normal Operation” mode) Finally, program at least one Alarm Alerting phone number or address using either the 11 or 21 command.

How do I program or change the primary alerting text message number?

A Text Message Alarm Alerting Number or EMAIL Message Alarm Alerting Address must be programmed. The primary alerting text message number is changed using command 11. To set the primary alerting number to 508-111-2222 send to the BoatNanny™ SMS text message 115081112222. (Reference the examples in the Basic Command List section of this guide.)

How do I add an EMAIL address to the alerting number list?

Adding an EMAIL Message Alarm Alerting address is accomplished by using command 21, 22 or 23. In order to set the EMAIL alarm alerting message address 1 to ‘test@boatnanny.com’, send an SMS text message to the BoatNanny™ containing ‘21test@boatnanny.com’.

How do I delete or change an EMAIL address that is in the alerting number list?

Alerting numbers or addresses are deleted by simply entering the matching command without a phone number or EMAIL address. For example, to clear the EMAIL alarm alerting message address 1, simply send an SMS text message to the BoatNanny™ containing ‘21’. Any other alerting number or EMAIL address can be cleared in this manner.

How do I check to see if my text messaging service has been activated?

The BoatNanny™ LED status indicator will slowly flash GREEN if all is normal. The flash rate of the LED will be very fast if cellular service is not achieved. Contact your service provider if you are not sure if your text messaging service has been activated.

How do I know when to change the batteries?

It is time to change the batteries if remote battery alarms are being received or if the Remote Unit Failure alarm has been received. Battery alarms such as “B Batt-Fail” and “R Batt-Fail” are low battery alerting alarms. The system alarm “R Unit-Fail” may also indicate that the remote unit batteries need to be changed. If the “B Batt-Fail” alarm is received then the base unit batteries may only need to be recharged. If this alarm persists then replace the base unit batteries with a similar type Nickel-Cadmium AA cells.

Important! ***DO NOT install alkaline batteries into the base unit. Install only 1.2V AA nickel-cadmium cells.***

How do I aim and adjust the motion sensor?

For best results do not aim or point the motion sensor directly at the targeted area. The detection range is shortest directly in front of the sensor. Objects are best detected while moving across the sensor field of view. (Left to right or right to left of the targeted view)

How do I change the sensitivity of the motion or the acoustic-monitoring sensor?

The sensor sensitivity is set using a scale from 1 to 10. A higher number will make the sensor more sensitive.

If I want to disable and alert, prevent a particular alarm from being sent to my cell-phone, how do I do it?

Setting the Message Alarm Alerting Enable or Disable command off will disable the alarm.

How do I obtain a phone number?

You will get a phone number along with your SIM card.

What is a SIM Card?

A SIM card is a flat rectangle plastic card that contains a microchip. This microchip contains your phone number and the necessary information for your phone to work. The SIM card is provided by your GSM cell phone service provider, such as T-mobile or AT&T in the USA. Most SIM cards will have the logo of the service provider on the topside.

Where can I purchase a SIM card?

We recommend Datablaze/T-Mobile WEB hosting service. This SIM card can be ordered with the BoatNanny™ and will be factory installed and delivered ready for activation. You may however obtain a SIM card from other GSM cellular service providers such as T-mobile or AT&T. You may also use your SIM card from your cell phone if you currently have GSM cellular service. For overseas use, you may purchase a pre-paid SIM card from the country your traveling to. Purchasing a pre-paid SIM card from your destination country will be much cheaper than paying roaming charges to your US service provider.

Does the BoatNanny™ come with a cell-phone contract?

No, you must activate your own service. We recommend ordering your service from Datablaze LLC. Please contact Sensormetrics The BoatNanny™ support for more information.

Troubleshooting

This section provides an overview of common issues, and possible solutions for the installation and operation of the Sensormetrics BoatNanny™.

The LED remains OFF and does not illuminate, flash or blink.

Make sure that the AC/DC power cord is connected to the BoatNanny™, the AC Adapter is plugged into an AC outlet and that the power switch is in the ON position. The batteries do not have to be charged as long as the AC/DC power is present.

The LED continuously flashes a fast green after power-up.

The BoatNanny™ is trying or has failed to connect to the cell phone network. Verify that the SIM card is correctly oriented in the SIM socket and importantly that the cellular service has been activated or has not expired. Also, confirm the coverage area of the service provider.

The Remote Sensor does not report an alarm when the float switch is triggered.

Make sure that the float switch is wired to terminals 4 and 5 on the remote switch. Also, make sure that the float switch is in the high water position for at least a few minutes. A quick flip of the float switch will not issue an alarm. The switch has to be closed for at least 5 seconds before an alarm will be sounded. If necessary replace the batteries in the remote unit and make sure that it is within the 100 foot operating range. Also check to make sure that the cables connecting the float switch to the remote unit have not been cut or damaged.

The acoustic sensor fails to detect audible sounds.

Verify that the acoustic detection level has been properly set and that the alarm is enabled. A higher detection level number will make the sensor more sensitive.

Why is it hard to hear sounds in the cabin when I call the BoatNanny™ ?

The acoustic monitoring uses a very sensitive microphone located in the BoatNanny™ base unit. Make sure that the sound entry holes located on the top cover are not obstructed.

The measured temperature in the base unit is reporting higher than normal readings.

Higher than normal temperature readings will be measured if the BoatNanny™ is installed in an area heated by the sun or radiator. It will also measure high readings if it is located in a confined area or on top of an appliance such as a refrigerator.

The motion sensor is slow or fails to detect motion activity.

Verify that the motion sensitivity has been properly set and that the alarm is enabled. A higher number will make the sensor more sensitive to motion.

No motion alarms are transmitted when the BoatNanny™ is first turned on.

This is normal operation. The motion sensor will not trigger an alarm until 30 seconds after the power has been switched ON. Make sure that the motion sensor alarm is enabled; power-cycle the BoatNanny™, wait at least 30 seconds and try again.

I hear a hum when the Acoustic Monitor first answers my voice calls.

This is normal operation. The received audio will “quiet” after several seconds.

I don't hear any ring tones after dialing/calling the BoatNanny™.

Since the BoatNanny™ will immediately answer the incoming call it is possible that you will not hear any ring tones.

I connected a siren to the switch on the remote unit but it does not ever switch on.

First, make sure that the siren is wired properly and it is functional. Send the SWON command and the siren should activate within a few minutes. Some cell-phone networks may take a while to send the message to the BoatNanny™. Be patient and allow a few minutes for the command message to reach the BoatNanny™.

The switch on the remote unit does not activate when the motion sensor has activated.

Make sure that the Relay Switch Mode is set to “0”. Issue the 940 command and try again.

I get Remote-FAIL and Remote-OK messages frequently.

Back to back Remote-FAIL/OK messages indicate communication problems with the remote unit. This can be due to temporary external RF interference such as Wi-Fi traffic. Make sure you are receiving good Remote data (e.g. Water, Remote Temp) in the daily status message. In that case, the Remote alarm can be DISABLED by sending the “800” command.

Technical Support

Sensormetrics, Inc. provides free BoatNanny™ technical support during the warranty period. If there is anything we failed to explain clearly or if you just have a question, please EMAIL us at info@sensormetrics.com.

Phone Support

508-845-7770 (9 AM to 5 PM EST Monday-Friday)

Internet Support

Users Guide updates and other helpful information can be found anytime at: <http://www.theboatnanny.com>.

Upgrade and/or Repair

Please contact Sensormetrics before returning any hardware for upgrade and/or repair. Packages will not be received without prior authorization.

Human Exposure Compliance Statement

All operating conditions and restrictions must be observed at all times to ensure compliance with current FCC guidelines which limit human exposure to radio frequency radiation.

- 20 cm (7.87 inch) separation distance between the antenna and all persons must be maintained at all times
- Maximum antenna gain is limited to 3 dBi* in mobile products and applications
- Maximum antenna gain is limited to 7 dBi* in fixed products and applications.
- Modifications and/or additions including use of antennas with higher gain than those authorized by the FCC, are prohibited

*dBi = antenna gain in dB relative to an isotropic radiator

The GSM cell phone Radio Module (FCC ID: MIVGSM0108) complies with the RF hazard requirements applicable to broadband PCS equipment operating under the authority of 47 CFR Part 24, Subpart E of the FCC Rules and Regulations. This certification is contingent upon installation, operation and use in accordance with all instructions provided in this manual. When installed and operated in a manner consistent with the instructions provided, the cell phone radio meets the maximum permissible exposure (MPE) limits for general population / uncontrolled exposure as defined in Section 1.1310 of the FCC Rules and Regulations.

Technical Specifications

LED Status Indicator

- Combination Power and Status Indicator (Multi-Color Red/Green)

Physical Dimensions

- Base Unit 5" X 7" X 1.75"
- Remote Sensor Unit 2.5" X 4" X 2" (without mounting tabs)

Power Input

- 100-240 VAC 50-60 Hz (AC Adapter)
- 12-24 VDC

Wireless Transmit Range

- Base to Sensor Up to 500 feet (100 Feet Typical)
- Cell-Phone (see carrier coverage map)

Wireless Frequency Range

- 2.4GHz to 2.462 GHz

External Antenna Type

- Single detachable SMA

Safety and Emissions

- FCC Part 15
- Contains TX FCC ID: SX9000RF2 and MIVGSM0108

Battery Life

- Base Unit (8 Hours Typical)
- Remote Unit (1 Year Typical)

Operating Temperature

- 0 Degrees F to 185 Degrees F

Humidity

- 95% maximum (non-condensing)

Terminal Block Contacts – Screw Terminals

- Brass with Nickel Plate (All fork/spade lugs are hand soldered.)

Consumer Limited Warranty

Sensormetrics, Inc. offers you a limited warranty that the enclosed product or products (the “Product”) will be free from defects in material and workmanship for a period that expires one year from the date of sale of the product to you, provided that you are the original end-user purchaser of the Product and provided that your purchase was made from an authorized supplier. Transfer or resale of the Product will automatically terminate warranty coverage with respect to that Product. This limited warranty is not transferable to any third party, including but not limited to any subsequent purchaser or owner of the Product. This limited warranty is applicable only to end users in the United States and Canada.

Sensormetrics, Inc. shall, at its sole and absolute discretion, either repair or replace a Product (which unit may use refurbished parts of similar quality and functionality) if found by Sensormetrics to be defective in material or workmanship, or if Sensormetrics determines that it is unable to repair or replace such Product, Sensormetrics shall refund the purchase price for such Product, provided that the subject Product (1) is returned, with transportation prepaid, to a Sensormetrics authorized service center within the one year warranty period, and (2) is accompanied by a proof of purchase in the form of a bill of sale or receipted invoice which evidences that the subject Product is within the one year warranty period (“Proof of Purchase”). After the one year warranty period, you must pay all shipping, parts and labor charges.

This limited warranty does not cover and is void with respect to the following: (1) any Product which has been improperly installed, repaired, maintained or modified; (2) any Product which has been subjected to misuse (including any Product used in conjunction with hardware electrically or mechanically incompatible or used with accessories not approved by Sensormetrics), abuse, accident, physical damage, abnormal operation, improper handling, neglect, exposure to fire, water or excessive moisture or dampness or extreme changes in climate or temperature; (3) any Product operated outside published maximum ratings; (4) cosmetic damage; (5) any Product on which warranty stickers or Product serial numbers have been removed, altered, or rendered illegible; (6) cost of installation, removal or reinstallation; (7) signal reception problems (unless caused by defects in material and workmanship); (8) damage the result of fire, flood, acts of God or other acts which are not the fault of Sensormetrics and which the Product is not specified to tolerate, including damage caused by mishandling, shipping and blown fuses; (9) consumables (such as fuses); or (10) any Product which has been opened, repaired, modified or altered by anyone other than Sensormetrics or a Sensormetrics authorized service center.

USE ONLY SENSORMETRICS APPROVED SENSORS AND ACCESSORIES. USE OF ANY UNAUTHORIZED SENSORS AND ACCESSORIES MAY BE DANGEROUS AND WILL INVALIDATE THE WARRANTY IF SAID SENSORS AND ACCESSORIES CAUSE DAMAGE OR A DEFECT TO THE PRODUCT.

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REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT OR REFUND OF THE PURCHASE PRICE RELATING TO A DEFECTIVE PRODUCT, AS PROVIDED UNDER THIS WARRANTY, ARE YOUR SOLE AND EXCLUSIVE REMEDIES FOR BREACH OF THE LIMITED WARRANTY, AND SUBJECT TO THIS WARRANTY, THE PRODUCTS ARE APPROVED AND ACCEPTED BY YOU “AS IS”. SENSORMETRICS MAKES NO OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS OF ANY KIND, ORAL OR VERBAL, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR AGAINST INFRINGEMENT OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF TRADE USAGE OR OUT OF A COURSE OF DEALING OR COURSE OF PERFORMANCE. NO DEALER, DISTRIBUTOR, AGENT OR EMPLOYEE IS AUTHORIZED TO MAKE ANY MODIFICATION OR ADDITION TO THIS WARRANTY.

