Yacht Sentinel
User Guide

rev 5
12.06.2012
fw20120718

CE

Contents

Technical Specification

General

- Casing measures approx. 12 x 7 x 3 cm
- Determination/transmission of GPS coordinates, speed, additional information from inputs
- Determination/transmission of GSM cell data and provider information (optional)
- Parameter configuration via SMS
- Current state is indicated via a green LED
- Ambient temperature: 0 … +50°C
- Storage temperature: 10 … +70°C

GSM

- Integrated GSM module: Telit GE865
- Suitable for all networks, frequencies (GSM850,E-GSM900,DCS1800, PCS1900) and providers UMTS not supported
- Usable with prepaid or contract SIM cards from all providers. No SIM lock
- Controlled via “normal” SMS. Acknowledgement via received SMS

GPS

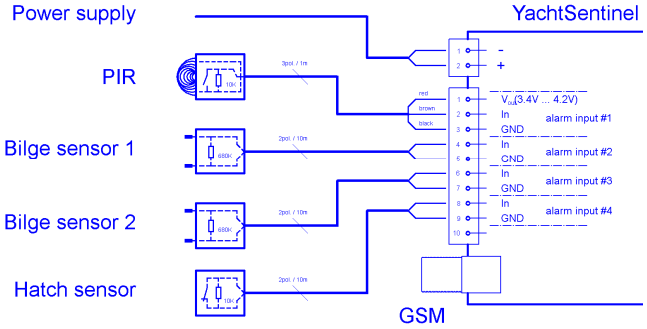
- SiRFstarIIII receiver with excellent GPS performance

- 20-channel GPS receiver
- Internal patch antennae

Input & Output Connections

The following diagrams show the input and output connections and their designations.

Inputs



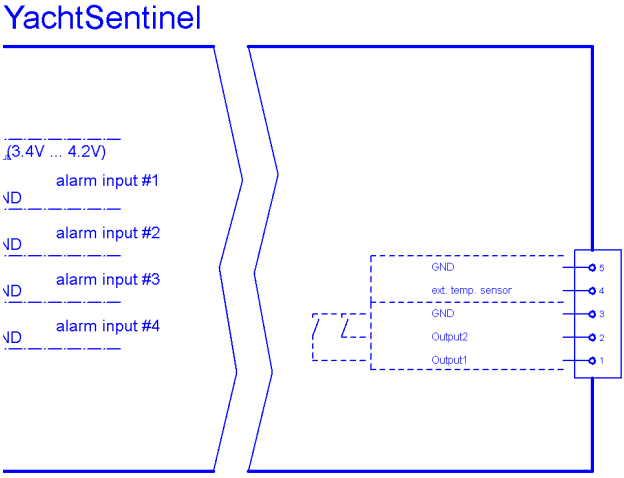
To ensure that defined levels are detected at the inputs all the inputs are internally ‘pulled up’ by 33k ohm resistors.

The YS needs to detect if a sensor is connected otherwise it will send a ‘not connected’ alarm, this is done by putting a ‘tamper’ resistor in each of the sensors. These are:

Movement Sensor	10k ohm
Bilge Sensors	100k ohm
Hatch Sensor	10k ohm

If other sensors types are used, such as a pressure mat, the ‘tamper’ resistor must be placed across the input (as in the above diagram) otherwise the sensor will not be recognized.

Outputs



When the output is activated the contact will close to GRD. Every output can be assigned an alarm input.

Sensors and Types

The Yacht Sentinel supports three types of sensors. The following table shows the types and a short description

Type	Description
NO	A sensor is used with a clean contact as “normal opened“ switch. That means, that the Yacht Sentinel will sent an alarm if the contact is be closed Note : The contact has to be bypassed by a 10k resistor if the sensor does not have an internal one.
NC	A sensor is used with a clean contact as “normal closed“ switch. That means, that the Yacht Sentinel will sent an alarm if the contact is be opened. Note : The contact has to be bypassed by a 10k resistor if the sensor does not have an internal one.
BILGE	A special bilge sensor with a internal bypass resistor of 100k . An alarm sms will sent if the sensor is immersed in water. Note : This sensor type can only be used on alarm inputs 2 and 3.

Power Supply
The *Yacht Sentinel* requires a single power supply in the range of 12 V … 24 V / 600 mA.

The following gives an overview of the average current consumption.

average current	**modes**
Up to 20 mA	GSM is registered and in standby GPS is in standby Tracking mode disabled MOVE & ANCHOR alarm disabled
Up to 25 mA	GSM is registered and in standby GPS in standby and active periodically to update GPS position Tracking mode disabled MOVE & ANCHOR alarm armed
Up to 45 mA	GSM is registered and in standby GPS full powered and constant updated GPS position Tracking mode enabled MOVE & ANCHOR alarm armed

Note: The stated current consumption is meaned as a average current consumption.
Because of the internal battery charger the measured current can deflect from the values in the table. To measure the correct average current consumption it is necessary to measure the consumed current for a least 10 days to make sure that some complete charge and discharge periods are measured

Note: The standby-current for GSM and GPS depends on the used GSM-provider and the environmental conditions and distance from the providers antenna.

Powering the *Yacht Sentinel* On/Off

The *Yacht Sentinel* can easily be switched on and off by pressing the button on top of the case.
Ensure first you have credit applied on your SIM card by use of the supplied swipe card.

To switch on the device, press the button briefly. The LED will flash 3 times to indicate that the *Yacht Sentinel* is switched on.

To switch off the device, press and hold the button for at least 3 seconds. The LED will flash 3 times to indicate that the *Yacht Sentinel* is now switched off.

Note: Due to the internal design of the *Yacht Sentinel*, it is only possible to switch off the device if no external power is applied. Otherwise you cannot switch off the *Yacht Sentinel*.

Note: It is possible that the *Yacht Sentinel* will switch on automatically if you connect it to an external power supply. This is due to the internal battery loader which ensures that the internal battery is fully charged each time.

Note: It is possible for the internal battery of the *Yacht Sentinel* to become fully discharged if the device is switched off for a long period (several weeks). If you now connect the *Yacht Sentinel* to the power supply, the device enters a special charge phase in order to charge the battery. During this phase, the GSM and GPS are completely switched off and the LED flashes at about 1 Hz. The *Yacht Sentinel* automatically enters normal operating mode when the internal battery reaches a specific charge threshold. The period required for the *Yacht Sentinel* to enter normal operating mode is dependent on the temperature, the internal battery and the external power supply. Values are typically 2 – 3 hours.

SMS Message Types

The *Yacht Sentinel* can send five different types of SMS.

The first one is the **parameter SMS**. This SMS contains all the settings for the device. The second type is the **status SMS** which contains e.g. the actual GPS position and the voltage of the internal battery. The third SMS type is the **alarm SMS** which is sent automatically by the device if an alarm occurs. The *Yacht Sentinel* can recognise some errors at the alarm sensor and indicates this with an **error SMS**. This is the fourth SMS type. The last SMS type is the **tracking SMS** which is sent to the use if tracking mode is enabled. This SMS contains the GPS position and time/date.

All the characters in a received SMS will be converted to uppercase letters so it does not matter if the commands are written in uppercase or lowercase letters or a mixture of both. It is necessary to put a comma between each command to separate them. Initially an SMS will only be recognised if the default password **4444** is at the beginning of the SMS. If not, the SMS will be rejected by the device. The password can set to a user defined password. Take a look at the command NEWPWD=>

Parameter SMS

The parameter SMS contains all the settings for the device. The SMS will be sent by the device to the originator of a received SMS if the originator requests it via the key word *parameter?*

SMS from the originator to the *Yacht Sentinel*

```
4444, parameter?
```

SMS from the *Yacht Sentinel* to the originator

```
YACHT Sentinel
MY BOAT
MMSI=680038636
MASTER1=+44179123xxxx
MASTER2=NA
MASTER3=NA
ALARM1=OFF,NO,PIRALARM
ALARM2=OFF,BILGE,BILGEALARM
ALARM3=OFF,BILGE,BILGEALARM
ALARM4=ON,NC,HATCHALARM
OUT1=ON
OUT2=ALARM1
TEMPALARM=ON
TEMPMAX=70
TEMPMIN=-2
SUPPLYALARM=ON
BATT=12
MOVEALARM=OFF
```

```
RADIUS=20
ANCHOR=OFF
SWING=20
```

Parameter Description

SMS text	Description
YACHT Sentinel	Device logo
MY BOAT	Name of the boat
MMSI=68003836	The MMSI number set by the user (default 000000000)
MASTER1=+44179123xxxx	Master no. 1 (an alarm SMS will be sent to this number)
MASTER2=NA	Master no. 2 (an alarm SMS will be sent to this number)
MASTER3=NA	Master no. 3 (an alarm SMS will be sent to this number)
ALARM1=ON,NO, PIRALARM	Indicates that the pir alarm is enabled
ALARM2=ON,BILGE, BILGEALARM	Indicates that the bilge alarm is enabled
ALARM3=ON,BILGE, BILGEALARM	Indicates that the bilge alarm is enabled
ALARM4=OFF,NO, HATCHALARM	Indicates that the hatch alarm is not enabled
OUT1 = ON	Indicates that output 1 in closed (switched)

OUT2 = ALARM1	Indicates that output 2 will operate if the PIR alarm is activated
TEMPALARM=ON	Indicates that the temperature alarm is enabled
TEMPMAX=70	Threshold for the high temperature alarm
TEMPMIN=-2	Threshold for the frost alarm
SUPPLYALARM=ON	Indicates that the battery alarm is enabled
BATT=12	12 V battery type used
MOVEALARM=OFF	Indicates that the move alarm is enabled
RADIUS=20	Gives the range in metres for the move alarm
ANCHOR=OFF	Indicates that the anchor alarm is enabled
SWING=20	Gives the range in metres for the anchor alarm

Status SMS

The status SMS contains all the actual values e.g. the GPS position and the voltage of the internal battery.

The SMS will be sent by the device to the originator of a received SMS if the originator requests it via the key word *status?*

SMS from the originator to the *Yacht Sentinel*

```
4444, status?
```

SMS from the *Yacht Sentinel* to the originator

```
YACHT Sentinel
MY BOAT
MMSI=680038636
FW=20090720
GSM=-89dbm
BOATBATT=11.7V
VBATT=4.2V
TEMP=25
GPSFIX=YES
TIME=11:26:35
DATE=31-05-12
LAT=52 06.4445N
LONG=008 39.8726E
SOG=33
COG=74
```

The following table is a short description of each parameter in the Status SMS

SMS text	Description
YACHT Sentinel	Device logo
MY BOAT	Name of the boat
MMSI=680038636	The MMSI set by the user (default 000000000)
FW=20090720	Firmware version
GSM=-89dbm	GSM level
BOATBATT=11.7V	Voltage of the boat battery / external power supply **Note**: If BATT is set to OFF then the Yacht Sentinel will write SUPPLYALARM=ON/OFF in the SMS instead of BOATBATT.
VBAT:4.05V	Voltage of the internal battery
TEMP:25	Temperature measured in °C
GPSFIX:YES	YES' if the device can receive the GPS position. Otherwise NO
TIME=15:26:35	Time when GPS was identified
DATE=15-11-12	Date when GPS was identified
LAT:52 06.4445,N	Latitude
LONG:008 39.8726,E	Longitude
SOG:33	Speed over ground measured in knots

COG:74	Course over ground

Alarm SMS

The alarm SMS will be sent automatically by the device to the numbers at *Master1*, *Master2* and *Master3*. The device will try to resend the SMS to the destination every 30 seconds until it is successful.

Alarm SMS from the *Yacht Sentinel* to the masters

```
<Alarm source>
YACHT Sentinel
MY BOAT
MMSI=680038636
BOATBATT=11.6V
VBATT=4.2V
TEMP=25
GPSFIX=YES
TIME=15:26:35
DATE=05-07-2012
LAT=52 06.4533,N
LONG=008 39.8711,E
SOG=33
COG=74
```

SMS text	Description
<Alarm source>	Indicates the type of alarm (see next table)

YACHT Sentinel	Device logo
MY BOAT	Name of the boat
MMSI=68003836	MMSI is set by the User (default 000000000)
BOATBATT=11.6V	Voltage of the boat battery / external power supply
VBAT:4.2V	Voltage of the internal battery
TEMP:25	Temperature measured in °C
GPSFIX:YES	YES' if the device can receive the GPS position, otherwise NO
TIME=15:26:35	Time when GPS was identified
DATE=15-11-12	Date when GPS was identified
LAT:52 06.4445,N	Latitude
LONG:008 39.8726,E	Longitude
SOG:33	Speed over ground in knots
COG:74	Course over ground

The following table shows the alarm indication for each alarm source.

<Alarm source>	**Description**

-=HITEMP-ALARM=-	Indicates that a high temperature alarm has occurred
-=FROST-ALARM=-	Indicates that a frost alarm has occurred
-=<CUSTOM NAME>=-	For the alarm inputs 1 to 4 a custom name can be assigned
-=SHOREPOWER-ALARM=-	Indicates that the shore power has been removed
-=BATT-ALARM=-	Indicates that the battery voltage is low
-=MOVE-OUT=-	Indicates that the device has moved out of the set GPS geofence position
-=MOVE-IN=-	Indicates that the device has moved into the set GPS position
-=ANCHOR-ALARM=-	Indicates that an anchor alarm has occurred

The standard alarm names are as follows:
Alarm1=PIRALARM, Alarm2=BILGEALARM1, Alarm3=BILGEALARM2, Alarm4=HATCHALARM

Error SMS

The error SMS will be automatically sent by the device to the numbers of *Master1*, *Master2* and *Master3* if one of the possible alarm sources is enabled and an

error has occurred at the corresponding sensor. The device will try to resend the SMS to the destination every 30 seconds as long as it is successful.

Error SMS from the *Yacht Sentinel* to the masters

```
-=ERROR=-
<Error description>
YACHT Sentinel
MY BOAT
MMSI=680038636
```

SMS text	**Description**
`-=ERROR=-`	Indicates the SMS as an error SMS
`<Error description>`	Short description of the error (see next table)
`YACHT Sentinel`	Device logo
`MY BOAT`	Name of the boat
`MMSI=680038636`	MMSI set by the user (default 000000000)

The following table shows the possible error descriptions sent by the *Yacht Sentinel*.

<Error description>	**Description**

SENSOR 1…4 NOT CONNECTED	Check the connection between the Yacht Sentinel and the sensor on input 1…4
SHORT CIRCUIT ON SENSOR 1…4	Check the contacts on the sensor connected to the shown input. They should be clean and not bypassed.

Tracking SMS

The tracking SMS will be automatically sent by the device if the tracking mode was previously enabled with the sms instruction ‘tracking=n,d (see parameter description)

Note: The tracking sms will send to the person which initiated the tracking mode, but not to the masters. The device will try to resend the SMS to the destination every 30 seconds unitl it is successful.

SMS Text	**Description**
-=TRACKING-SMS=-	indicates as tracking SMS
YACHT Sentinel	Device Logo
MY BOAT	Name of Boat

SMS Text	Description
MMSI=680038636	The MMSI set by user
GPSFIX:YES	YES' if device can receive GPS position, otherwise'NO'
TIME=15:26:35	Time GPS position sent
DATE=05-11-09	Date GPS position sent
LAT:50 50.5528N	Latitude
LONG:001 06.0977E	Longitude
SOG=33	Speed Over Ground (knots)
COG=74	Course Over Ground
REMAINING-SMS =5	Number of SMS left until tracking mode deactivated

SMS Commands

The device is fully configurable via SMS commands. The following table shows each command with a short description. The permitted values/ranges are given in

brackets. The subsequent pages show some examples of how to use these commands.

SMS command	Description
PARAMETER?	Request for a parameter SMS. The device will send a parameter SMS to the originator.
STATUS?	Request for a status SMS. The device will send a status SMS to the originator.
MASTER1=	Command to set the number for Master1. Default: NA [max. 18 characters]
MASTER2=	Command to set the number for Master2. Default: NA [max. 18 characters]
MASTER3=	Command to set the number for Master3. Default: NA [max. 18 characters]
TEMPALARM=	Command to enable or disable the temperature alarm. [ON/OFF]
TEMPMAX=	Command to set the threshold temperature in °C for the temperature alarm. [0 … 100]

TEMPMIN=	Command to set the threshold temperature in °C for the temperature alarm. [-20 … 100]
MOVEALARM=	Command to enable or disable the move alarm. [ON/OFF] **Note:** By enabling the move alarm, the current position will be saved as the 'home position' and the anchor alarm becomes disabled. The RADIUS parameter gives the permitted movement of the boat around the home position. If the boat moves out of the set radius, the *Yacht Sentinel* sends MOVE-OUT to the masters. If the boat moves back within 15m of the home position, the *Yacht Sentinel* sends MOVE-IN to the masters.

RADIUS=	Command to set the permitted movement in metres if the move alarm is enabled. [20 … 200] **Note:** The permitted range is from 20m to 200m. Since the *Yacht Sentinel* works internally with steps of 5m, the set value will be rounded to the last even multiple of 5 e.g. a radius of 27m becomes 25m.
ANCHORALARM=	Command to enable or disable the anchor alarm. [ON/OFF] **Note:** By enabling the anchor alarm, the current position will be saved as the 'home position' and the move alarm becomes disabled. The parameter SWING gives the permitted movement of the boat around the home position. If the boat swings out of the set radius, the *Yacht Sentinel* sends ANCHOR-ALARM to the masters.

SWING=	Command to set the permitted movement in metres if the anchor alarm is enabled. [20 … 200] **Note:** The permitted range is from 20m to 200m. Since the *Yacht Sentinel* works internally with steps of 5m, the set value will be rounded to the last even multiple of 5 e.g. a swing of 27m becomes 25m.
SMSTO=	Normally the device will send a parameter or status SMS to the originator of a received SMS. In some cases, it is useful to send the requested SMS to another destination. If so, then the destination number can be set by the parameter SMSTo=. Example: SMSTo=+44123456789
BATT=	Command to set the type of battery to either 12 V or 24 V or if 'off' set the supply type to shore power. see note 1
SUPPLYALARM=	Command to enable or disable the battery alarm.[ON/OFF] see note 1
SETDEFAULTS!	This command sets all parameters/settings to default values except master numbers and password

ALARM1= ALARM2= ALARM3= ALARM4=	Command to set the parameter for the alarm input 1…4. The command has three parameters: 1: ON/OFF enable or disable the alarm 2: NC/NO the connector sensor set to normally closed or normally open 3: Alarm text to indicate the alarm in the alarm sms. All three parameters can easily be set with one command. Examples: Alarm4=off Alarm4=on,nc,alarmtext Alarm4=on,alarmtext It is possible to set just one two or all three parameters with one commeand. **Note:** All blank characters will be deleted and all characters uppercased.
OUT1= OUT2=	Command to set the output 1…2 ON/OFF enables or disables the output ALARM1/ALARM2/ALARM3/ALARM4 enables the output when the alarm occurs. Default = OFF Note: ON connects the output direct to ground and OFF makes it High impeadance. Note: If the output is set to Alarm, the output is OFF until the alarm occurs.

NAME=	Command to set the name of the boat. This name will be sent in each SMS. Default: MY BOAT [max. 12 characters]
MMSI=	Command to set MMSI Maritime Mobile Service Identity (max 12 chracters)
NEWPWD=	Command to change the default password for SMS commands. NEWPWD= must be followed by the 4 digit password you wish to set. Example NEWPWD=1111
TRACKING =n,d	Command to activate SMS tracking n = number of tracking SMS [0..20] d = time between each SMS[1..10] mins example to activate tracking mode: TRACKING=10,2 example to deactivate: TRACKING=0

Note1:
For BATT set to 12/24 An alarm SMS will be sent if the battery voltage is below a defined threshold voltage for at least 30 seconds. Due to this delay, it is possible to start some heavy loads connected to the battery without a false alarm. The threshold voltage is 11V for a 12V battery and 22V for a 24V battery. The parameter sms will show the parameter BOATBATT=..V with actual battery voltage

for BATT set to OFF: A shore power alarm sms will be sent if the supply voltage for the Yacht Sentinel is under a defined threshold voltage for 30 seconds. The parameter sms will show the parameter SUPPLYALARM=ON/OFF to indicate a connected/disconnected shore power.

SMS Examples

To request a status SMS, send the following text to the *Yacht Sentinel*:

```
4444, status?
```

To request a parameter SMS, send the following text to the *Yacht Sentinel*:

```
4444, parameter?
```

To request a parameter SMS with a destination other than the originator number, send the following text to the *Yacht Sentinel*:

```
4444, parameter?,
SMSTo=+44123456789
```

To set the numbers Master1 and Master2 and request a parameter SMS to check the numbers, send the following text to the *Yacht Sentinel*:

```
4444, parameter?,
Master1=+44179123456,
Master2=+44123456789
```

To enable the alarm2 as a bilge alarm and disable alarm2, send the following text to the *Yacht Sentinel*:

```
4444,
alarm2=on,bilge,bilgealarm
alarm4=off
```

To enable the hatch alarm and set the permitted swing to 35 metres, send the following text to the *Yacht Sentinel*:

```
4444,
anchoralarm=on,
swing=35
```

To change the password for SMS commands to 1111 send the following text to *YachtSentinel:*

```
4444,newpwd=1111
```

To enable the tracking function for 10 SMS with an interval of 2 minutes, send the following text to *YachtSentinel:*

```
4444,tracking=10,2
```

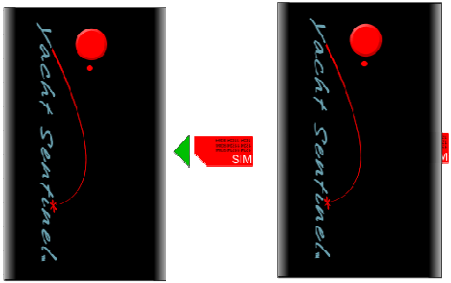
LED Flashing Codes

The *Yacht Sentinel* uses different flashing codes of the LED to indicate the current state of the GSM module.

LED	GSM	GPS
1 x red	The *Yacht Sentinel* is registered (logged in) and ready to use.	A GPS position is recognised
2 x red	The *Yacht Sentinel* is registered (logged in) and ready to use.	A GPS position is not recognised.
3 x red	The *Yacht Sentinel* is not registered in the GSM network.	
Fast flashing	The *Yacht Sentinel* is receiving or transmitting an SMS.	

Slow flashing	The internal battery is in low voltage state and it should be loaded by the external voltage. The GSM module cannot be used in this state.	The GSM module cannot be used in this state.

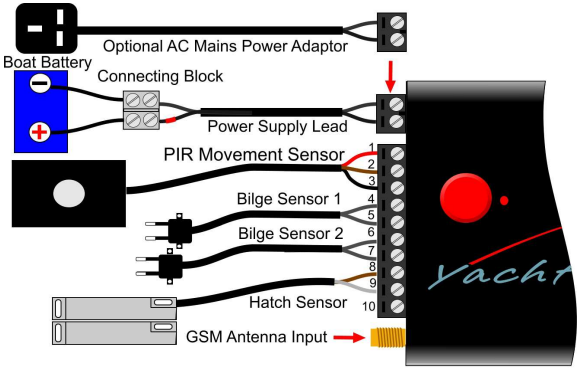
SIM card installation



The SIM card is installed by sliding the SIM card into the slot at the side in the orientation shown. Once the SIM is fully inserted you will feel it contact a spring, push against this spring with your nail or a matchstick or similar pointer until you hear a quiet ‘click’. This will show you have reached the ‘locked’ position. In the

locked position the edge of the SIM card is just below the surface of the slot.

The supplied Vodafone SIM card will have been associated with the swipe card supplied. This means you can put credit on the SIM without needing to remove the SIM card by using the swipe card. It may be that the user wishes to use their own operator SIM card. In this case remove the supplied SIM card with replace with the new SIM card as shown previously. It is advisable that you obtain a swipe card with the SIM to avoid having to continually remove the SIM.

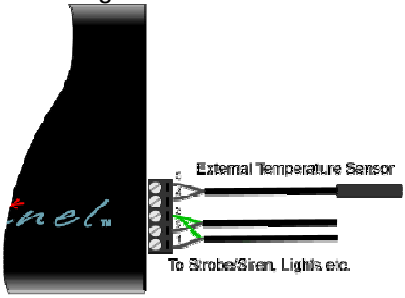


External Input Connection Diagram

External Connections

Yacht Sentinel has an external connector that enables the connection of power and sensors. If you look at the External Connection Diagram, you will see how the connections are arranged when in standard mode. It is quite easy to add other sensors in place of those

shown, such as pressure mats, tilt sensors, lanyards etc to monitor a wide range of possible events.
Likewise there are three external outputs one external temperature sensor and two ‘clean contact’ outputs for switching other devices.



Power Connection

Yacht Sentinel comes with a battery supply lead provided, or with an optional AC mains adaptor power supply lead. Both supply lead connectors use the supply socket shown. All supply leads come with the connector already attached, **please do not remove the connectors from their leads as the connector is designed to only fit the supply socket. If you**

wish to use mains supply you MUST use the power adaptor unit

DO NOT AT ANY TIME connect the free end of the battery supply lead to 240vAC mains supply as this will damage the unit.

Bilge Sensors

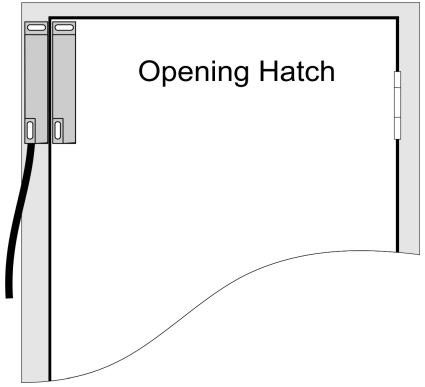
Bilge sensors are connected as shown in the 'External Connection Diagram'. Ensure you make a note of which sensor is placed in which part of the bilge, as warnings will use these terms. Please use the supplied double sided tape to affix the bilge sensors into position. Please make sure that you don't position the sensors too close to the existing bilge level so that you don't get false warnings. A single sensor has to be immersed in water for 4 minutes before a bilge alarm is issued while if both sensors are immersed the alarm will be issued after 1 minute.

Hatch Sensor

Please ensure that the hatch sensor is connected as shown in the 'External Input Connections' Diagram.

The Hatch Sensors consist of one connected component and one free component. The free component has an internal magnet that is detected by the connected component. When the free component moves away from the fixed component then an alarm is registered. It is therefore important that with the hatch in a closed position the fixed and free components are side by side

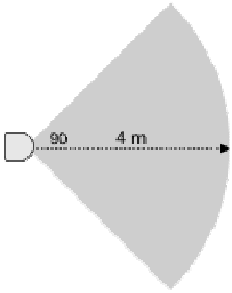
Hatch Sensors mounted on the hatch door frame.



It is possible to connect multiple contact sensors in parallel.

Infra-Red Movement Sensor

This sensor is designed to detect any movement by using heat sensing. Any person entering the PIRs detection area will be detected as a moving heat source by the PIR. In order to reduce the current consumption of the PIR, it will turn on detection once every second. The detection range is 4 metres at an angle of 90°.
The IR sensor obtains it's power from the supply input,



so the PIR is connected to both the supply pair connector and one of the inputs to the hatch sensor.
Below is a diagram of how the Infra-Red movement sensor is connected to Yacht Sentinel.
Please place the PIR movement sensor so that the detection zone (as shown above) covers the points of entry into the boat.

Connections
Please connect the PIR movement Sensor as shown below:

red wire - screw connector 1
brown wire - screw connector 2
black wire - screw connector 3

Please send the following text to Yacht Sentinel to ensure operation.

4444,PARAMETER?,
ALARM1,on,no,piralarm

Please use your own password number if you have changed from the default password.

Password Reset

Proceed the following steps to reset the password for sms commands to the default value of 4444:

1. The Yacht Sentinel must be switched on an registered to the GSM network
2. Phone the Yacht Sentinel

3. The LED begins to flash at max 30 seconds
4. Push the red button once during the call
5. Yacht Sentinel will hang up the call
6. The Yacht Sentinel sets the password to 4444 and sends an SMS as notification to all masters
7. Now you can set a new password with the command NEWPWD.
8. After the user resets the password, all masters will receive the following sms as notification that the password is set to the default value:

```
-=PASSWORD-RESET=-
YACHT SENTINEL
MY BOAT
MMSI=680038636
```

Alarm Behaviours

Temperature Sensor (If fitted)
Alarms immediately. Timeout for next temp alarm 10 mins.

Hatch Sensor and PIR

Alarms immediately. Timeout for next hatch alarm/movement sensor, 10 mins.

Bilge Sensor
Alarms after 4 minutes if only one bilge sensor is immersed in water. 1 minute after both simultaneously immersed in water.

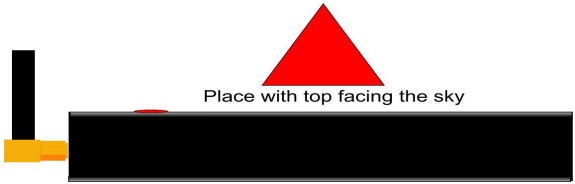
Boat Battery
30 seconds after the voltage of the boat battery below the set level. Timeout for next boat battery alarm sms is 10 minutes after the voltage is above the set limit.

Shore Power
30 seconds after Yacht Sentinel recognises shore power is not connected. Timeout for next shore power alarm is 10 minutes after shore power is recovered.

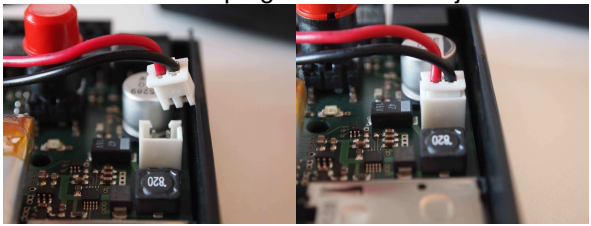
Installation Tips

Install the unit on a flat surface with the top facing directly up to the sky to ensure the best connection with GPS satellites. If you need to ensure that the unit does not move around excessively, then please use either double-sided tape or velcro to fix it to a surface.

Please be aware that we send Yacht Sentinel with the



internal battery disconnected. Please open the unit at the ‘seam’ by gently inserting a knife and twisting until the unit ‘pops’ open. You will see the free battery connector. Please plug this into the adjacent socket.

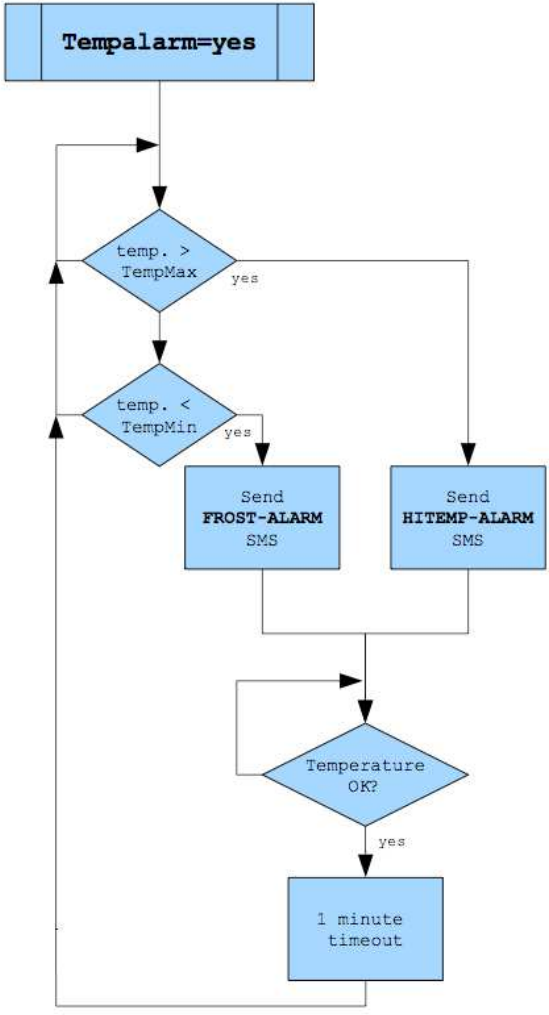


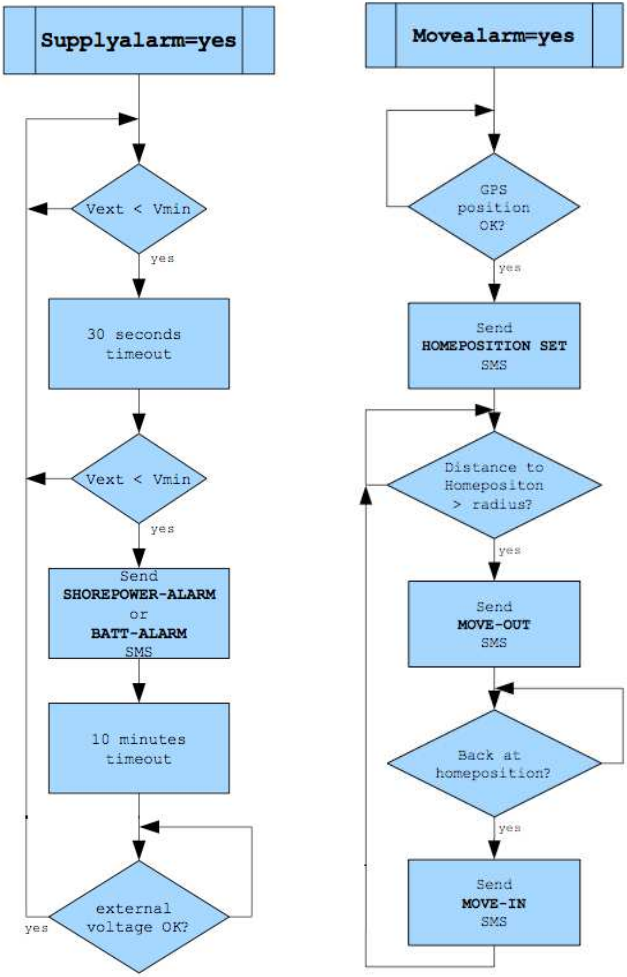
Trouble Shooting & Flowcharts

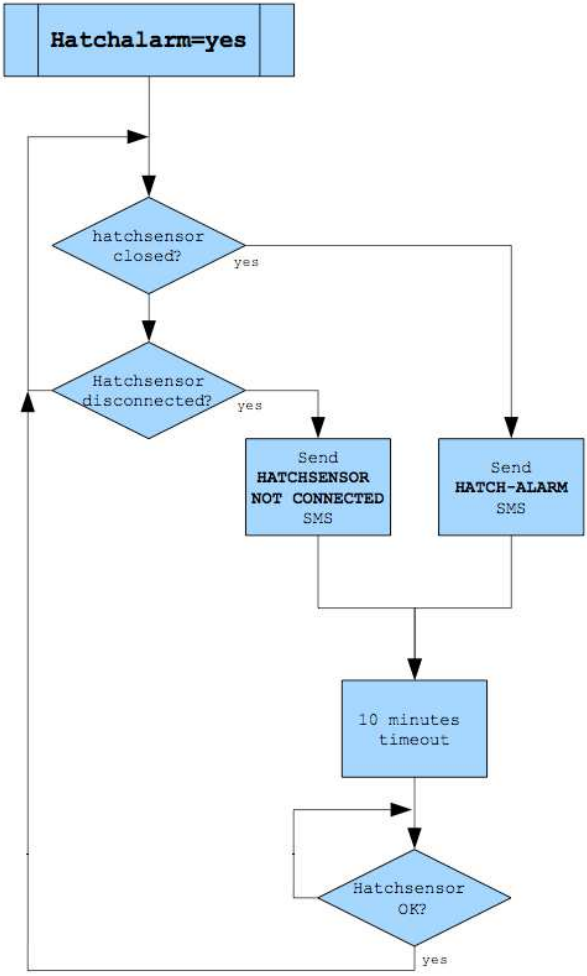
- Check SIM card has credit by inserting into a standard mobile phone
- Check you can send and receive a text from your SIM card by inserting into a mobile phone.
- Open up the Yacht Sentinel (YS) case check inside that the internal battery connector is connected
- Insert SIM card into YS
- Connect the YS battery fly lead to your Boat Battery or the mains power supply adaptor to shore power.
- You will get three fast flashes on the red LED every 3-4 seconds initially. You will then see a quick series of flashes as the YS registers with the network, the unit will then give 2 quick flashes every 3-4 seconds.
- When the unit is flashing two times, then send an SMS to the YS **4444,status?**
- Once this SMS is sent you will see the SMS being received by the YS as a series of quick flashes
- The YS will then continue two (or one flash if GPS has been detected) every 3s-4s after a delay of 60s (depending on the network) you

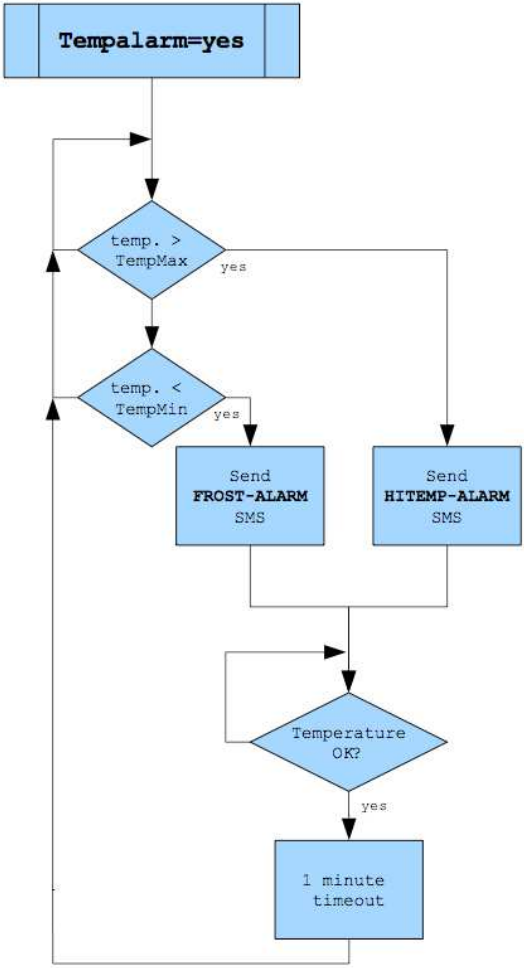
will see another series of quick flashes, this is the unit sending an answering SMS. You will then receive the SMS on your mobile. This will prove that communication is working with YS.

- If you see a slow flash of around 1-2 seconds with a longer interval, this will mean that the battery is not fully charged.
- Check the battery voltage of the boat and ensure that it is above 12vDC or that you have shore power
- When the YS is charged enough, the unit will continue as in 6 above. It may take 2-3 hours for the battery to charge to the correct level.


Tempalarm=yes
temp. > TempMax
yes
temp. < TempMin
yes
Send FROST-ALARM SMS
Send HITEMP-ALARM SMS
Temperature OK?
yes
1 minute timeout


Supplyalarm=yes
Vext < Vmin
yes
30 seconds timeout
Vext < Vmin
yes
Send SHOREPOWER-ALARM or BATT-ALARM SMS
10 minutes timeout
external voltage OK?
yes
Movealarm=yes
GPS position OK?
yes
Send HOMEPOSITION SET SMS
Distance to Homepositon > radius?
yes
Send MOVE-OUT SMS
Back at homeposition?
yes
Send MOVE-IN SMS


Hatchalarm=yes
hatchsensor closed?
yes
Hatchsensor disconnected?
yes
Send HATCHSENSOR NOT CONNECTED SMS
Send HATCH-ALARM SMS
10 minutes timeout
Hatchsensor OK?
yes


Tempalarm=yes
temp. > TempMax
yes
temp. < TempMin
yes
Send FROST-ALARM SMS
Send HITEMP-ALARM SMS
Temperature OK?
yes
1 minute timeout

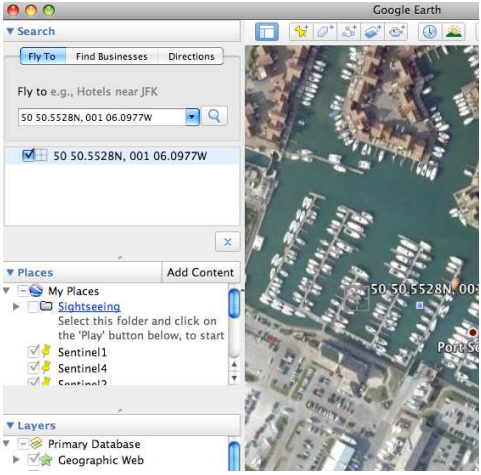
Preparing GPS coords for GoogleEarth

The information for Latitude and Longitude can be entered directly into Google Earth or Google Maps.

Example:
The Yacht Sentinel sends the position in the SMS:

```
LAT:50 50.5528,N
LONG:001 06.0977,W
```

An example for entering the coordinates “50 50.5528N, 001 06.0977W”



Disclaimer

Please be aware that the use of Yacht Sentinel is at the users own risk. Please see the website for terms and conditions

Warranty
All new goods supplied by Yacht Sentinel have a 12 months warranty period from the date the goods were delivered (unless otherwise stated). This warranty does not affect your statutory rights as a consumer. If new goods develop a defect during the 12 month warranty period please contact us and we will advise the returns procedure.

Please note that the warranty does not cover you for any defects in the goods arising from fair wear and tear, willful damage, accident, negligence by you or any third party, use otherwise than in accordance with its intended use, failure to follow the manufacturer's or Supplier's instructions, or any alteration or repair carried out without the Yacht Sentinel's prior written approval.

This is a product of Intelligent Devices Limited

Lutidine House
Newark Lane
Ripley
Surrey GU23 6BS
United Kingdom

tel: +44(0)1483 270220
email: info@intelligentdevices.co.uk

www.yacht-sentinel.com