

**Harbour Watch  
Manual**

P & S Ref. 2071P



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**Ship Name .....**

**Phone Number.....**

**PIN Number .....**

### 1.1 HarbourWatch - Introduction

The HarbourWatch system utilises GSM Text Messaging to alert duty holders to alarm conditions occurring to Bilge, Battery, H2S Gas, Fire and Intruder detectors when the vessel is not manned.

When the vessel is manned the system performs the duty of an alarm panel.

The system can be configured as required by the customer and extended to cover many alarms, there is also the option of fitting it with a small TFT display panel instead of the LED's

### 1.2 System Overview

The unit is built into a IP65 steel enclosure 300w x 300h x 210d. It is powered by the 24Vdc supplies from the main batteries. This power is used to produce a regulated 12Vdc supply for the intruder and fire detectors if required.



### 1.3 Inputs monitored

The following inputs are monitored as standard.

1. Port Battery
2. Stbd Battery
3. Fire – Engine Room
4. Fire – Accommodation
5. Intruder – Saloon
6. Intruder - Bridge
7. H2S Gas
8. Aft Bilge
9. Midships Bilge
10. Fwd Bilge

### 1.4 Indicators

There is a red LED indicator for each alarm condition (except the low battery).

There is a green LED indicator for “Power”, “Ashore” & “Onboard” mode.

If a low battery voltage is detected the “Power” LED will flash.

If there is no mobile phone coverage when in “Ashore” mode the “Ashore” indicator will flash.

### 1.5 Horn Operation

When set to the ‘ashore’ mode any alarm occurring will cause the buzzer to sound, only the ‘Intruder’ alarm will cause the horn & strobe(if fitted) to be initiated.

When set to ‘onboard’ mode the ‘Intruder’ alarm will not initiate the buzzer but all the other monitored points will initiate the it.

The buzzer/horn can be ‘muted’ by the ‘mute’ button, once muted the buzzer/horn will not operate again for that alarm until it has first cleared. Any new alarms will initiate the buzzer/horn(if appropriate).

When in “Ashore” mode the horn will go off after 10 minutes and start again if the alarm has not been “muted” after 1 hour. The 10minutes ‘on’ & 1 hour ‘off’ cycle will continue until the alarm is “muted” or the unit is set to “Onboard” mode. When the horn restarts a “Status” text is sent out.

### 1.6 Setting Ashore or Onboard mode

The unit may be toggled between 'Ashore' and 'Onboard' mode by pressing the 'Mode' button in the correct sequence.

Alternatively a text message may be sent to the unit to set the mode:  
Once the mode has changed a "Status" text will be sent out to confirm.

Please remember that when set to "Ashore" mode the Intruder alarms are active and will lock once triggered, see the Intruder section.  
If there is no mobile signal coverage when in "Ashore" mode the "Ashore" LED will flash.

### 1.7 Remote Status Request

A remote status request can be obtained from the unit by sending a text message as follows:

STA<PIN> - If the text message gets through correctly, the unit will send a text message back detailing the current status in the following format:

*Vessel Name*, BATTERY OK, BILGES OK, H2S OK, FIRE OK, INT OK, ASH

The above message shows that all points being monitored are OK and that the unit is in "Ashore" mode.

If there is a battery alarm then this will show BATTERY LO.

If there is a bilge alarm then this will show BILGES HI

If there is a gas alarm then this will show H2S HI

If there is a fire alarm then this will show FIRE AL

If there is an intruder alarm then this will show INT AL

If in "Onboard" mode the message will finish with "ONB"

### 1.8 Alarm Message to Mobile Phone

When in ‘Ashore’ mode any alarms that occur will initiate a text message being sent to up to 5 different mobile phones.

If an alarm has not been accepted (mute button pressed) after 1 hour a “Status” message will be sent.

### 1.9 Setting Mobile Phone Numbers

Initially the mobile phone numbers required will be programmed into the unit. Once in operation, modification of the stored numbers can be achieved by sending a text message to the unit as follows:

Send a text message to the unit in the following format:

CNGx\*+yyzzzzzzzzzz\**<pin>*

Where *x* is the store location number 1,2,3,4 or 5

*y* is the country code for the mobile.

*z* is the mobile number without the leading 0

*<pin>* is the pin number

Hence to insert/overwrite the number 07921131839 into store location 3 the text required would be:

CNG3\*+447715524605\*9999

After doing this wait about 10 minutes for the text to get through then change to “Ashore” mode and check that a text is sent to the new phone (allow 5 mins for the text to get through), if it does not resend the text to change the number again and check again.

To clear a number from location 3 the text to be sent should be

CNG3\*\*9999

### 1.10 Bilge Level Sensors

Existing sensors may be utilised, or new sensors supplied, we can advise on the best type of sensors to fit.

### 1.11 H2S Gas Sensor

H2S gas sensors can be supplied if required.

### 1.12 Intruder Alarms

To enable ships staff to leave the vessel after switching to “Ashore” mode the channels are inhibited for 25 seconds after switching to “Ashore” mode.

While in “Ashore” mode if either Intruder sensor is detected then this will be locked in and the alarm will be raised after 25 seconds, to disable this lock in the unit must be switched to “Onboard” mode within the 25 seconds.

If an intruder alarm has been activated, it can only be reset by changing to “Onboard” mode.

When in “Onboard” mode the Intruder Alarm indicators will illuminate in conjunction with the inputs.

### 1.13 Battery Monitor

The voltages from the two battery banks are monitored. If the battery voltage falls below set limits then a Alarm message is sent out when the battery voltage drops to 22Vdc.

If any battery alarm is active the green “Power” LED will flash until the alarm has been “Muted”.

Please note that for the unit to operate correctly at least one battery voltage must be above 21.5Vdc

### 1.14 PLC Battery

The program within the PLC is stored in the RAM with a lithium battery. If the battery needs to be replaced a square on the display at the top just below the word ‘Bat.Lo’ will illuminate.

If the battery needs to be replaced, open the battery cover, this is on the front right of the PLC (see the internal layout picture) insert a small screwdriver into the bottom joint then gently twist and lever up. Ensure that the PLC is powered up, remove the battery and fit the new battery, then refit the cover.

**1.15 Standard Unit - Wiring Connections**

Number	Type	Signal	Description
1	Terminal	Batt1 + 24V	+ve supply from the Port Battery
2	Terminal	Batt1 -	-ve supply from the Port Battery
3	Terminal	Batt2 +24V	+ve supply from the Stbd Battery
4	Terminal	Batt2 –	-ve supply from the Stbd Battery
5	Terminal	Fire E.R.	Signal from the E.R. Fire detector
6	Terminal	Fire Accom	Signal from the Accom. Fire detector
7	Terminal	Intruder Bridge	Signal from the Bridge Intruder detector.
8	Fused Terminal 1A	+24V Out	+24V supply for fire & intruder signals.
9	Terminal	Intruder Saloon	Signal from the Saloon Intruder detector.
10	Terminal	0V return	0V return for Intruder & Accom. Fire detectors.
11	Fused Terminal 1A	+12V Out	+12V supply for Intruder & Accom. Fire detectors
12	Fused Terminal 1A	+24V Out H2S	+24V supply for the H2S sensor
13	Terminal	H2S return	4-20mA signal from the H2S sensor
14	Terminal	Bilge Aft	Signal from the Aft Bilge sensor
15	Terminal	Bilge Mid	Signal from the Midships Bilge sensor
16	Terminal	Bilge Fwd	Signal from the Fwd Bilge sensor
17	Terminal	0V return	0V return for the Bilge Sensors
18	Fused Terminal 1A	+24V Out Bilge	+24V supply for the Bilge sensors
19	Terminal	0V Out Strobe	0V out to external Strobe
20	Fused Terminal 1A	+12V Out Strobe	+12V out to external Strobe
21	Terminal	0V Out Ext. Horn	0V out to external Horn
22	Fused Terminal 1A	+12V Out Ext.Horn	+12V out to external Horn



**1.16 Specification**

<b>Description</b>	
Dimensions	300mm High, 300mm Wide, 210mm deep
Weight	8kg
Mounting Hole Centres	260mm x 260mm, holes 8.5mm dia
Cable entry	Through gland plate at the bottom
Power Supply	2 off nominal 24Vdc, min 21Vdc max 28Vdc
Inrush Current	20A for 20mS
Current	Nominal 0.6amp, Max (with 2Amp external load) 4.1A
Power Consumption	Nominal 15W, Max (with 2 Amp external load) 99W
User - Input Circuit Type - Digital	7 off 24Vdc sink, with 2 off fused 24Vdc and 1 off fused 12Vdc excitation supplies
User – Input Circuit Type - Analogue	2 off inputs 0 to 10Vdc scaled with a 470K resistor to read 0 to 30Vdc. 1 off 4-20mA loop powered with trip amplifier to digital input.
User – Output Circuit Type	+12V Relay output fused at 1Amp
	Note – variations to inputs & outputs can be provided.
Operating Temperature	-50 to +50 deg C
Storage Temperature	-30 to +80 deg C
Relative Humidity	5 to 95% non condensing
GSM Band – UK Version	Dual Band 900/1800 Mhz
GSM Band – US Version	Dual Band 805/1900 Mhz
Number of telephone numbers to send messages to.	5 as Standard – up to 10 on request.
Not included	SIM card