



AMI MARINE (UK) LTD

**BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM
(BNWAS)**

Operators Manual
BNWAS150

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BNWAS150 - Bridge Navigational Watch Alarm System

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Document Revision	Date	Modification Number (where applicable) Brief Record of Change and Reason for Change
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NOTE:

All alterations must be verified by re-authorisation and approval of the complete document.

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IMPORTANT WARNINGS



DANGER!
RISK OF ELECTRICAL SHOCK!

Disconnect from the power before removing protective covers.
DO NOT remove the covers while the unit is switched on.
24/12 Volt DC electrical power on external units.

NOTICE

Compass safe distance is 1 metre.

NOTICE

No user serviceable parts inside, servicing only by properly qualified and certified technical staff.

NOTICE

This manual is for informational use only, and may be changed without notice. This manual should not be construed as a commitment of AMI Marine (UK) Ltd. Under no circumstances does AMI Marine (UK) Ltd assume any responsibility or liability for any errors or inaccuracies that may appear in this document. The equipment should only be used for the purposes intended by the manufacturer; any deviation from this will void the warranty of the product.

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BNWAS150 - Bridge Navigational Watch Alarm System

- BNWAS 150 System Overview

The BNWAS 150 system is designed for use on a vessel's navigation bridge. The remote alarm sounders cover key locations such as the officer cabins, mess area and ship's office.

Reset devices can be used on the bridge wings.

The display control and monitoring equipment is to be installed in protected areas inside the bridge.

Dormant Time

This function is adjustable between 3-12 minutes in 1 minute increments only whilst in SETUP mode.

Remote Resets

BNWAS 150 has a reset mechanism which can be activated by a combination of reset pushbuttons and PIR motion detection sensors.

Fail Alerts

BNWAS 150 has alert messages for Tamper, Power and Battery. Tamper alert is also audible by means of an on-board buzzer within the display control unit.

Emergency Call and Cabin Call

BNWAS 150 has an Officer call configurable in up to 5 officer cabins within the menu.

Power supply

BNWAS 150 is powered by two separate 24 Volt supplies (main and backup) which will automatically switch to the backup supply in the event of a main supply failure. This will raise an alarm.

Inputs from Valid Reset Devices & System Alarms

BNWAS 150 provides additional Digital Inputs to accept signals from other devices and transfer alarms. An external equipment in alarm will send a digital input to the BNWAS and the source will be shown on LCD display. These might include RADAR or ECDIS.

External valid reset inputs must be approved by the appropriate approval body before being used.

AMI Marine (UK) Ltd will assist with recommendations wherever possible from previous experience but will not accept responsibility if not accepted.

BNWAS 150 comprises:

Hardware consisting of - Control display panel, interface unit, physical and sensory reset devices, alarm sounders and beacons.

The BNWAS 150 Software Navigation Menu where the Master can configure and control the operational mode and parameters of the system.

Overall Layout

There are three areas within the vessel where the system and peripheral units are fitted:-

Wheel house / Bridge

Accommodation Areas

Remote Locations

BNWAS150 - Bridge Navigational Watch Alarm System

Wheel house / Bridge

Equipment - Control display, Stage 1 Alarm sounders, Alarm Beacon, Directional PIR's, and push button reset switches. Push buttons can be mounted on the Bridge wing, and are IP rated accordingly.

Accommodation Decks

Equipment - Stage 2 Alarms are located in the accommodation area. The system is configurable through the navigation menu, for five separate accommodation rooms, labelled: Cabin 1, Cabin 2, Cabin 3, Cabin 4, Cabin 5 - (Captain, Officer 1, 2, 3 and 4) The alarm sounders or sounder beacons can be used.

Remote Locations

Equipment - Stage 3 Alarms are located in remote locations which could include Officer's mess, Office locations and Engine Control Room. They can be alarm sounders or sounder beacons.

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- BNWAS 150 Controls and Functions

DC-150 Display and Control

The BNWAS DC-150 Display Control Panel is the user interface and display for the BNWAS150. The display control panel is to be mounted at a suitable location within the ship bridge preferably at a location where the watch officer is expected to be stationed during normal on watch operations.



Figure 1 - DC-150 Control Display Panel

The Key switch has 2 positions which change the function of the tactile buttons;

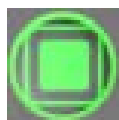
1. RUN - Normal operation position where the system is monitoring all sensor inputs.
2. SETUP - To set the 'Operational Mode' and to adjust the timing parameters.



EMERGENCY CALL / UP



CABIN CALL / DOWN



ALARM RESET / SELECT

Automatic Dimming of the LCD Display

A light detection sensor automatically dims the display at low light levels to prevent light pollution during night time operation.

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RI-150 Illuminated Reset Pushbutton

and RE-150 Illuminated Reset Pushbutton with Buzzer

The RI-150 reset pushbutton unit can be used to reset the BNWAS system's timer before or during the 1st stage alarm. The RE-150 unit performs the same function but also has an audible alarm making it ideal for use on the bridge wings.



**Figure 2 - RI-150
Illuminated Reset Pushbutton**



**Figure 3 - RE-150
Illuminated Reset Pushbutton with Buzzer**

SD-150 Alarm Sounder and SB-150 Sounder Beacon

The SD-150 alarm sounders are used for the 2nd or 3rd stage alarms and have adjustable volume between 85 and 105dB. The SB-150 performs the same function but also has a highly visible LED indication.



**Figure 4 - SD-150
Alarm Sounder**



**Figure 5 - SB-150
Sounder Beacon**

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- Software Setup and Operation


Switching On The BNWAS 150

SETUP Menu

The SETUP mode allows the user to access the SETUP MENU and customise the timing parameters within the BNWAS 150 menus.

To enter the SETUP mode insert the key and turn clockwise to SETUP.

Mode Selection

In the SETUP menu you can step sequentially through the three different modes of operation by pressing the  SELECT button. The three different modes are:-

ON

The system functions as per the set timing parameters.
Alarms as per IMO standard MSC128(75).

OFF

System operation inhibited. The Emergency Call function is still operational

AUTO




When this mode is selected the system runs as per "ON" mode only if Autopilot signal is active; otherwise operation is inhibited. This function should only be used with class approval.

STAGE ALARM 3 Timing Selection

Press the  SELECT button until you arrive at the Stage Alarm 3 timing option.

Stage 2 to Stage 3 Delay Time




The Stage 2 to Stage 3 delay is defined in seconds. This is the time from the Stage 2 alarm becoming active to the Stage 3 alarms becoming activate, assuming Stage 2 is not acknowledged in the meantime.

The Stage 2 to Stage 3 delay is configured using the  UP and  DOWN buttons. A time between 90 seconds and 180 seconds in 10 second steps can be entered. When the desired timing is displayed press the  SELECT button.

DORMANT Period Timing Selection

Press the  SELECT button until you arrive at the dormant period timing option.

Dormant Period Time

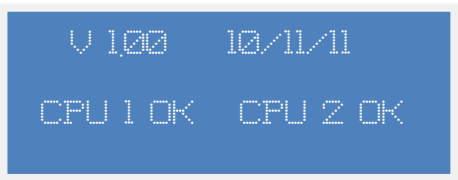
The dormant period is defined in minutes. This period is the time taken from initial start-up, or operator reset, to the Visual Alert Stage being initiated. The dormant period is configured using the  UP and  DOWN buttons to toggle between digits 3 and 12. When the desired period is displayed press the  SELECT button.

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BNWAS150 Startup



On first power up a message from the system designers will appear on the display.



The software version and date will then be displayed followed by CPU 1 and CPU 2 running a self-test, a short beep will be heard on completion.




After a few seconds the operating screen will be displayed.

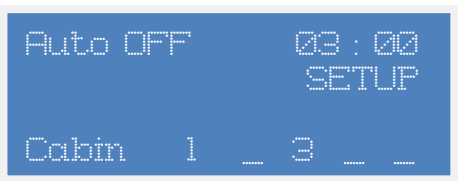
Entering Setup



Insert the MODE key and turn clockwise – the status indication will change from **RUN** to **SETUP**



Press  SELECT button - mode will change from **ON** to **OFF**. The BNWAS is now set to OFF.




Pressing the  SELECT button again, will cause the mode to change from **OFF** to **Auto OFF**

If the Autopilot is connected the system will automatically turn ON and OFF as the autopilot is engaged and disengaged.

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Mode Selection



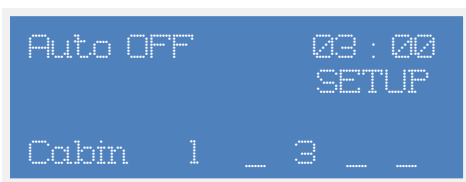
Pressing the  SELECT button again, will change **Dormant Period** to **ON**.


If the key is now turned to the RUN position and removed, the system is now in the ON mode.



Pressing the  SELECT button again will change **ON** to **OFF**.

If the key is turned to RUN and removed the system is now in the OFF mode.






Pressing the  SELECT button again will change **OFF** to **Auto OFF**.

If the key is turned to RUN and removed the system is now in the Automatic mode. The display will change to **Auto ON** if the Autopilot is connected and the Autopilot is engaged.

Stage 2 to Stage 3 Delay





Pressing the  SELECT button again will change **Auto OFF** to **Stage Alarm 3**.

By using the  UP and  DOWN buttons the stage 3 alarm time can be changed, from 90 seconds (1:30) up to 180 seconds (3:00 minutes) in 10 second steps.

Initial Dormant Period



Pressing the  SELECT button again will change **Stage Alarm 3** to **Dormant Period**.

By using the  UP and  DOWN buttons the dormant period time can be changed from 3 minutes to 12 minutes, in 1 minute steps.


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Operational Sequence




When the BNWAS countdown reaches **00 : 00** the **STAGE ALARM** message will appear.

The display and the remote reset buttons will now flash.

To reset the system press the  RESET button or press a remote reset button.



15 Seconds after Stage Alarm is displayed **STAGE ALARM 1** will be displayed and the Stage 1 alarm on the display unit will audible alarm along with any local sounder.

To reset the system press the  RESET button or press a remote reset button.




15 Seconds after Stage Alarm 1 is displayed **STAGE ALARM 2** will be displayed and Stage 2 and the selected cabin sounders will also begin to sound.



To reset the system press the  RESET button or press a remote reset button.



1:30 to 3:00 minutes after stage 2, depending on the stage 3 delay setting, **STAGE ALARM 3** will be shown and all sounders will sound in all installed locations.

To reset the system press the  RESET button on the display. NB: Pressing the remote resets, or motion detected by the PIR will not reset the system once stage 3 alarm has been reached.



EMERGENCY CALL, In the event of an emergency press and hold the  EMERGENCY CALL button until the alarm sounds. All stage 1 and the selected cabin sounders will become active. To reset the system press the  RESET button on the display. NB: Pressing the remote resets or motion detected by the PIR will not reset the EMERGENCY CALL.






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Selecting Duty Cabins and Using Cabin Call



Selecting Duty Cabins for Stage 2 Alarm

The Selecting and De-selecting Cabins function can only be accessed when the system is in **RUN** MODE.






Press and hold the  SELECT button until  appears. With the  SELECT button held press  UP to move between the cabins and press  DOWN to select or de-select a cabin. When selected the cabin's number will be remain displayed.





Example:
Removing **Cabin 4** - which is selected in the screen to the left. Press and hold the  SELECT button and  will appear at cabin number 1





While still holding the  SELECT button, press  UP and the cursor  will move to the next cabin location.






Repeat this past cabin **3**, still holding the  SELECT button and pressing  UP again.





While still holding the  SELECT button, press  UP once more so that **4** is shown on the display.



Continue to hold down the  SELECT button. Once at cabin number **4** press  DOWN -  will now be shown instead of **4**. Cabin 4 is now de-selected and will not be alerted at stage 2 or when Cabin Call is pressed.

Using Cabin Call Function



If the  CABIN CALL button is pressed the **CABIN CALL** message appears and the cabins selected at the bottom of the screen will have their sounders activated. In this case cabins 1 and 3 will be called. Press the  RESET button to clear the CABIN CALL.

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External Reset (if external equipment connected)

```
ON          03 : 00  
            RUN  
RADAR RESET  
Cabin  1  _ 3  _  _
```

RADAR RESET message will be shown when the RADAR is in use by an operator and the BNWAS timer will reset.

(This will only be shown if the RADAR in use connection is made)

```
ON          03 : 00  
            RUN  
ECDIS RESET  
Cabin  1  _ 3  _  _
```

ECDIS RESET message will be shown when the ECDIS is in use by an operator and the BNWAS timer will reset.

(This will only be shown if the ECDIS in use connection is made)

```
ON          03 : 00  
            RUN  
AUXILIARY 1 RESET  
Cabin  1  _ 3  _  _
```

AUXILIARY 1 RESET message will be shown when the equipment connected to Auxiliary 1 is in use by an operator and the BNWAS timer will reset.

(This will only be shown if the Auxiliary 1 connection is made)

```
ON          03 : 00  
            RUN  
AUXILIARY 2 RESET  
Cabin  1  _ 3  _  _
```

AUXILIARY 2 RESET message will be shown when the equipment connected to Auxiliary 2 is in use by an operator and the BNWAS timer will reset


(This will only be shown if the Auxiliary 2 connection is made)

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Unacknowledged Alarms (if external equipment connected)

```
ON 00 : 00
STAGE ALARM 2 RUN
RADAR ALARM
Cabin 1 _ 3 _ _
```


RADAR ALARM This will be displayed if an unacknowledged alarm is received from the Radar.

Pressing the  RESET button will display any other active alarms but will not reset the alarm.

(This will only be shown if the RADAR alarm is connected)

```
ON 00 : 00
STAGE ALARM 2 RUN
ECDIS ALARM
Cabin 1 _ 3 _ _
```


ECDIS ALARM This will be displayed if an unacknowledged alarm is received from the ECDIS.

Pressing the  RESET button will display any other active alarms but will not reset the alarm.

(This will only be shown if the ECDIS alarm is connected)

```
ON 00 : 00
STAGE ALARM 2 RUN
AUTOPILOT ALARM
Cabin 1 _ 3 _ _
```


AUTOPILOT ALARM This will be displayed if an unacknowledged alarm is received from the Autopilot.

Pressing the  RESET button will display any other active alarms but will not reset the alarm.

(This will only be shown if the Autopilot alarm is connected)

```
ON 00 : 00
STAGE ALARM 2 RUN
ECHO SOUNDER ALARM
Cabin 1 _ 3 _ _
```


ECHO SOUNDER ALARM This will be displayed if an unacknowledged alarm is received from the Echo Sounder.


Pressing the  RESET button will display any other active alarms but will not reset the alarm.

(This will only be shown if the Echo Sounder alarm is connected)

```
ON 00 : 00
STAGE ALARM 2 RUN
UNACKNOWLEDGED ALARM
Cabin 1 _ 3 _ _
```

UNACKNOWLEDGED ALARM This will be displayed if any unacknowledged alarms, other than those listed above, are received by the BNWAS.

Pressing the  RESET button will display any other active alarms but will not reset the alarm.

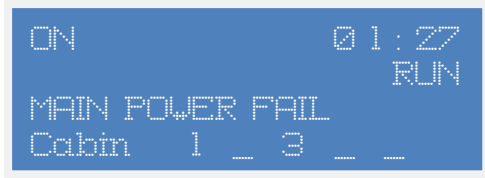
NOTE!! For all of the above unacknowledged alarms, pressing the  RESET button will have not reset any alarm until the equipment generating the alarm has been acknowledged.


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- System Faults

Power Error


If the main power fails the standby power will be used to power the system. This is indicated by the MAIN POWER FAIL being displayed on the LCD screen until the main power is restored to the system.



MAIN POWER FAIL will be shown if the main power input fails. Press the  RESET button to clear message. If message does not clear check main power input.

If the standby power fails, while main power remains on, STANDBY POWER FAIL will be indicated on the LCD display until the standby power is restored.




STANDBY POWER FAIL will be shown if the standby power fails. Press the  RESET button to clear message. If message does not clear check standby power input.

Tamper Error

If the interface to any peripheral device is disconnected, “**Tamper**” will be displayed on the LCD screen. This will continue to be displayed until the cause of the tamper is removed.



If the **Tamper** message appears, the PIRs or one of the reset switches may have been tampered with or have become faulty. Check the PIR's and reset switches for damage.

Press the  RESET button to clear the message once any fault has been rectified.

If **Tamper** remains displayed there is a further problem with another PIR or reset switch.

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- Maintenance guide

The BNWAS 150 system requires periodic (annually) confirmation that all sensors are active, and conduct a full system integrity check.

Any damaged/inactive peripherals **MUST** be replaced by a suitable spare part by an approved engineer.

All cabling and interfaces should be re-checked to confirm system integrity and any damaged cables must be replaced/re-wired if required by an approved engineer.

Any changes made above must be tested to confirm system operation.

Any warranty void marks/visible tampering must be logged to prevent future disruption and system damage.