NAVITRON SYSTEMS LTD

NT990 Bridge Navigational Watch Alarm System (BNWAS)

Type Approved by GL, RMRS & CCS for full compliance with IMO Resolution MSC. 128(75) & IEC 62616 (GL), the Navitron NT990 BNWAS is available as a basic system to operate proprietary alarm units etc. (if appropriate) or, as an expanded system complete with selector units, remote resets including movement detectors and individual cabin and / or crew call audible alarms. The resultant alarm system provides a regulation safety monitor requiring regular acknowledgement (Reset) by the duty watch personnel at selectable time intervals between 3 and 12 minutes.

Model NT990BNWAS Display Unit
Dims 144mm x 144mm x 53mm (depth)

- **Work Mode Selectable: -**
  (Permanently 'ON', Permanently 'OFF' or Automatic 'AUTO')

- **Time Selectable: -**
  (3 mins to 12 mins in 1 min steps confirmed by LED display)

- **Keyswitch Security Protected: -**
  (Work Mode and Time change by key holder only)

- **Alarm Status Displays: -**
  (All Alarm stages LED displayed)

- **Fail Alarm Status Displays: -**
  (All failure modes LED displayed)

- **Remote Alarm Unit Facilities: -**
  (All Alarm stages accompanied by voltfree closing contact)

- **Emergency Call Facility: -**
  (Immediate Officer assistance request signalled)

Once activated, completion of the specified timeout period (3 - 12 mins) will automatically generate a Bridge visual alarm (15 secs) followed by a Bridge audible alarm (15 secs) which is tone and volume adjustable during installation.

Alarm cancellation and commencement of a new timing period will occur whenever the BNWAS 'Reset' button is operated on the main unit or other Wheelhouse/Bridge located Reset units. These can include those available from proprietary equipment workstations (Radar / ECDIS etc.) and the Central Alarm Panel.

Failure to 'Reset' the system during the 30 second Bridge visual/audible alarm period will result in automatic 'Officer Call' alarm activation which, if not acknowledged within a maximum period of 3 minutes, will automatically be followed by the generation of 'Crew Call' alarms.

In the event of a sudden crisis situation requiring immediate Officer assistance, the NT990 BNWAS also features an 'Emergency Call' facility which may be operated at any stage of the timing cycles.

Further built in security and error management provisions include 'Tamper' and 'Power Fail' alarm indications commensurate with MSC. 128(75) & IEC 62616.

The NT990 BNWAS is available in basic and expanded system forms to suit vessels of all types and tonnages and can be operated from 115 / 230VAC (DB2) and 24Vdc (DB 1) ships main power supplies as required.

The Basic and Expanded NT990 BNWAS configurations are shown overleaf.

Optional Remote Reset Unit
Dims 58mm x 64mm x 35mm (depth)
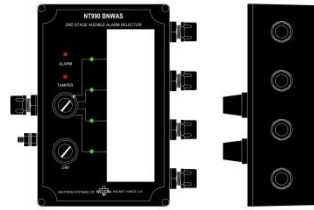
Bridge Visual Alarm (WAS BVA)
(Dimensions 93 dia x 65 (mm))

For bridge / wheelhouse deckhead mounting (or a prominent location within the wheelhouse) this unit provides the first stage (15 secs) alarm indication to watch personnel and is accompanied by flashing LED indication on the Main Display / Control Unit.

2nd Stage Selector Switch (WAS OSS)
(Dimensions 95 x 145 x 49 (mm))

If the first stage visual alarm is not reset by bridge watch personnel within 15 seconds, this is accompanied by a bridge audible alarm for a further 15 secs beyond which - if still not reset - the second stage Officer Call alarm is generated.

The Officer Call can be routed to the required duty officer Cabin Alarm unit via the Officer Selector Switch (OSS).

(Dimensions 90 x 115 x 55 (mm))

Officer Cabin Sounder Unit (WAS CA)   Masters Cabin Sounder Unit (WAS MCA)

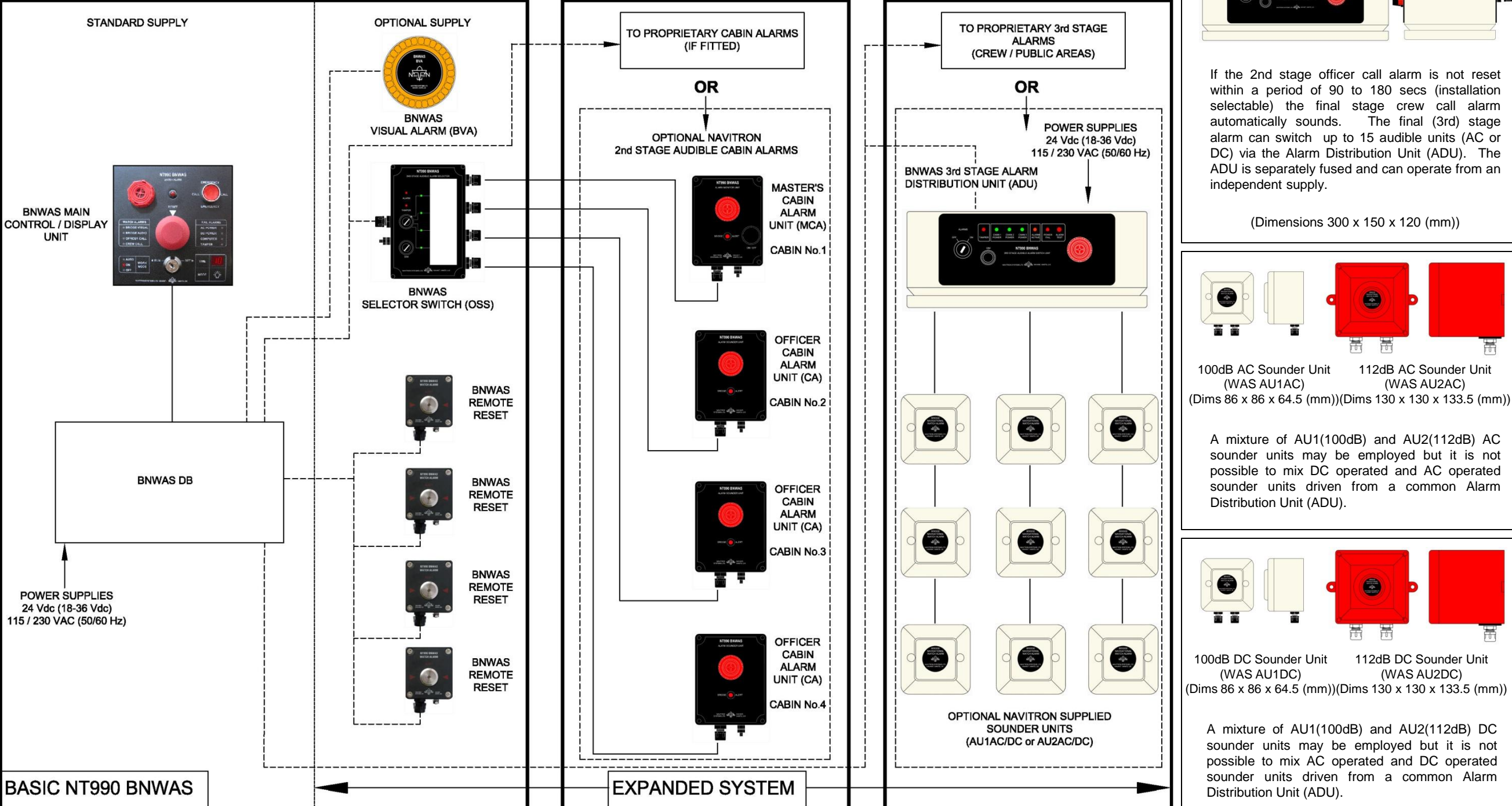Officer Cabin Alarm units are available in two types:-

CA - Standard Duty Officer visual & audible alarm unit(s) active via OSS.

MCA - Masters cabin alarm which can monitor all other Duty Officer units or can be switched "OFF" to leave just the standard unit(s) active as selected via the OSS.
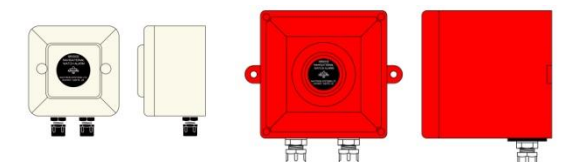
BRIDGE / WHEELHOUSE EQUIPMENT

STANDARD SUPPLY

OPTIONAL SUPPLY

BNWAS MAIN CONTROL / DISPLAY UNIT

BNWAS VISUAL ALARM (BVA)

BNWAS SELECTOR SWITCH (OSS)

BNWAS DB

BNWAS REMOTE RESET

BNWAS REMOTE RESET

BNWAS REMOTE RESET

BNWAS REMOTE RESET

POWER SUPPLIES
24 Vdc (18-36 Vdc)
115 / 230 VAC (50/60 Hz)

BASIC NT990 BNWAS

2nd STAGE AUDIBLE ALARMS (OFFICER CABINS)

TO PROPRIETARY CABIN ALARMS (IF FITTED)

OR

OPTIONAL NAVITRON 2nd STAGE AUDIBLE CABIN ALARMS

MASTER'S CABIN ALARM UNIT (MCA)
CABIN No.1

OFFICER CABIN ALARM UNIT (CA)
CABIN No.2

OFFICER CABIN ALARM UNIT (CA)
CABIN No.3

OFFICER CABIN ALARM UNIT (CA)
CABIN No.4

3rd STAGE AUDIBLE ALARMS (CREW / PUBLIC AREAS)

TO PROPRIETARY 3rd STAGE ALARMS (CREW / PUBLIC AREAS)

OR

POWER SUPPLIES
24 Vdc (18-36 Vdc)
115 / 230 VAC (50/60 Hz)

BNWAS 3rd STAGE ALARM DISTRIBUTION UNIT (ADU)

OPTIONAL NAVITRON SUPPLIED SOUNDER UNITS
(AU1AC/DC or AU2AC/DC)

EXPANDED SYSTEM

If the 2nd stage officer call alarm is not reset within a period of 90 to 180 secs (installation selectable) the final stage crew call alarm automatically sounds. The final stage (3rd) alarm can switch up to 15 audible units (AC or DC) via the Alarm Distribution Unit (ADU). The ADU is separately fused and can operate from an independent supply.
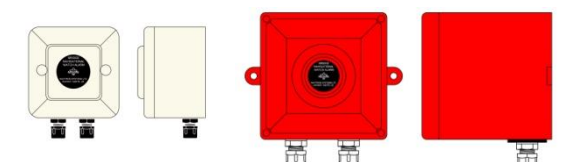
(Dimensions 300 x 150 x 120 (mm))

100dB AC Sounder Unit (WAS AU1AC)
(Dims 86 x 86 x 64.5 (mm))

112dB AC Sounder Unit (WAS AU2AC)
(Dims 130 x 130 x 133.5 (mm))

A mixture of AU1(100dB) and AU2(112dB) AC sounder units may be employed but it is not possible to mix DC operated and AC operated sounder units driven from a common Alarm Distribution Unit (ADU).

100dB DC Sounder Unit (WAS AU1DC)
(Dims 86 x 86 x 64.5 (mm))

112dB DC Sounder Unit (WAS AU2DC)
(Dims 130 x 130 x 133.5 (mm))

A mixture of AU1(100dB) and AU2(112dB) DC sounder units may be employed but it is not possible to mix AC operated and DC operated sounder units driven from a common Alarm Distribution Unit (ADU).

NT990BNWAS Technical Specifications

Certification Standards:-
IEC 62616: 2010 & MSC.128(75) Germanischer Lloyd & MED Wheelmark

BNWAS Input / Output Specifications

Inputs: -			Outputs: -		
Type	Supply Voltage	Power	DB Alarms & CU Status Displays		
BNWAS / 1	Primary 24Vdc (18-36Vdc)	3.2W to 4.5W (max illum) + optional equipment	Bridge Visual (15 secs)	LED + volt free N/O contact rated 5A @ 30Vdc / 220VAC	
	Emerg 24Vdc (18-36Vdc)				
BNWAS / 2	115/230VAC 50/60Hz		Bridge Audible (15 secs)	LED + volt free N/O contact rated 5A @ 30Vdc / 220VAC	Tone & Volume installation adjustable
	Backup 24Vdc (18-36Vdc)				
	Emerg 24Vdc (18-36Vdc)				

Auto (Remote) Activation via DB1 & DB2		Officer Call (90 – 180 secs)	LED + volt free N/O contact rated 5A @ 30Vdc / 220VAC	90, 120, 150, 180 secs installation adjustable
Two Opto isolated input types: -				
NMEA sentence $XXHTD	Installation selectable for 4800 or 38,400 baud			
Analogue 11-40Vdc	Installation selectable switchline polarity			

Operator Controls			Crew Call (Until Reset)	LED + volt free N/O contact rated 5A @ 30Vdc / 220VAC	Can be combined with Officer Call
Time	3 to 12 minutes selectable in 1 min increments	Keyswitch security protected			
Work Mode	Selectable 'ON', 'OFF' or 'AUTO' Mode		AC Power Fail (BNWAS 2)	Status LED	Volt free N/O contact rated 5A @ 30Vdc/220 VAC for ext. console malfunction alarm
Illum	Variable Red LED Backlight	Keypad	DC Power Fail	Status LED	
Reset	Cancels all alarms and resets timing cycles	Pushbutton	Computer Fail	Status LED	
			Tamper	Status LED	
Emergency Call	Summons immediate Officer Assistance	Protected Pushbutton	Complete Power Fail	Volt free S/P C/O contact	To external Fail Alarm
Reset (Remote Unit)	Cancels alarms / Restarts timing / adjusts Remote unit illumination level	Pushbutton			

Operating Temperature Range
-15 to +55°C

Digital Interface Unit (DIU)			
3 x Opto Isolated IEC 61162 Serial Data Installation Selectable for 4800/38400 baud.			
CH1	$xxEVE, $xxALR, $xxACK	$BNALR, $BNACK	
CH2	$xxEVE, $xxALR	$BNALR, $BNACK	
CH3	$xxEVE		
3 x Opto Isolated (5-40Vdc) Analogue		1 x Voltfree Changeover Relay Contact (1A 240Vac/30Vdc) Malfunction Alarm	
2 x Reset Inputs from Proprietary Equipment			
1 x Emergency Call Input from required Location			
Movement (PIR) Detectors		Operating Temperature Range	
2 x Reset Inputs		-15 to +55°C	

Mechanical			Compass Safe Distance (CSD)
	Dimensions (mm)	Weight	
Display Unit	144 x 144 x 47 (depth)	1.0Kg	0.2m
Distrib (DB1)	222 x 146 x 55 (depth)	0.85Kg	0.2m
Distrib (DB2)	275 x 175 x 65 (depth)	1.5Kg	0.2m
Rem. Reset	58 x 64 x 35 (depth)	0.2Kg	0.2m
Bridge Visual (BVA)	93 dia x 65 (depth)	0.15Kg	0.1m
Selector Switch (OSS)	95 x 145 x 49 (depth)	0.5Kg	0.1m
Cabin Sounders (CA/MCA)	90 x 115 x 55 (depth)	0.5Kg	0.1m
Switch Unit (ADU)	300 x 150 x 120 (depth)	3.1Kg	0.25m
100dB Sounder (AU1 AC/DC)	86 x 86 x 64.5 (depth)	0.25Kg	0.1m
112dB Sounder (AU2 AC/DC)	130 x 130 x 133.5 (depth)	0.75Kg	0.1m
Movement Detector	60 x 106 x 46.5 (depth)	0.15Kg	0.1m
Digital Interface Unit (DIU)	146 x 222 x 55 (depth)	0.9Kg	0.1
Emergency Battery Box (UPS)	146 x 222 x 106.7 (depth)	3.0Kg	0.2