



# Solutions for NMEA Dealers

BÖNING SOLUTIONS TO INTEGRATE TO THE NAVCOM EQUIPMENT



September/2020

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# Overview

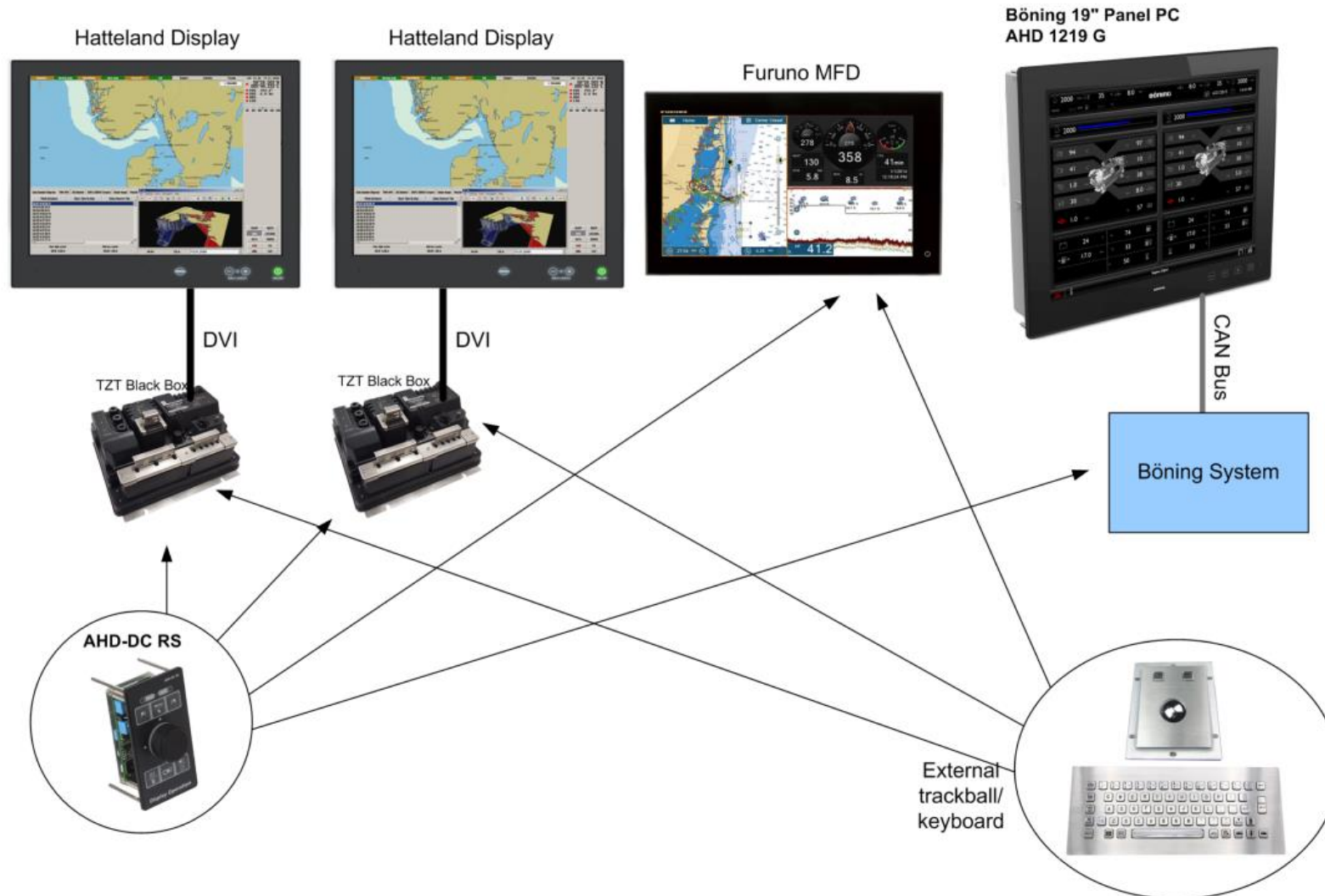
All solutions applicable for yachts and commercial vessels

1. Multi-screen trackball
2. One screen multiple processors solution
3. Multi-screen dimming panel
4. NavCom bridge alarm panel
5. Panel PCs for Nobeltec TimeZero
6. Ultra-wide navigation display (for overhead installation)
7. Video matrix control panels
8. Bridge management system
9. Universal marine interface converter
10. TimeZero Gateway for NMEA
11. Navigation lights Panel
12. Whistle control panel



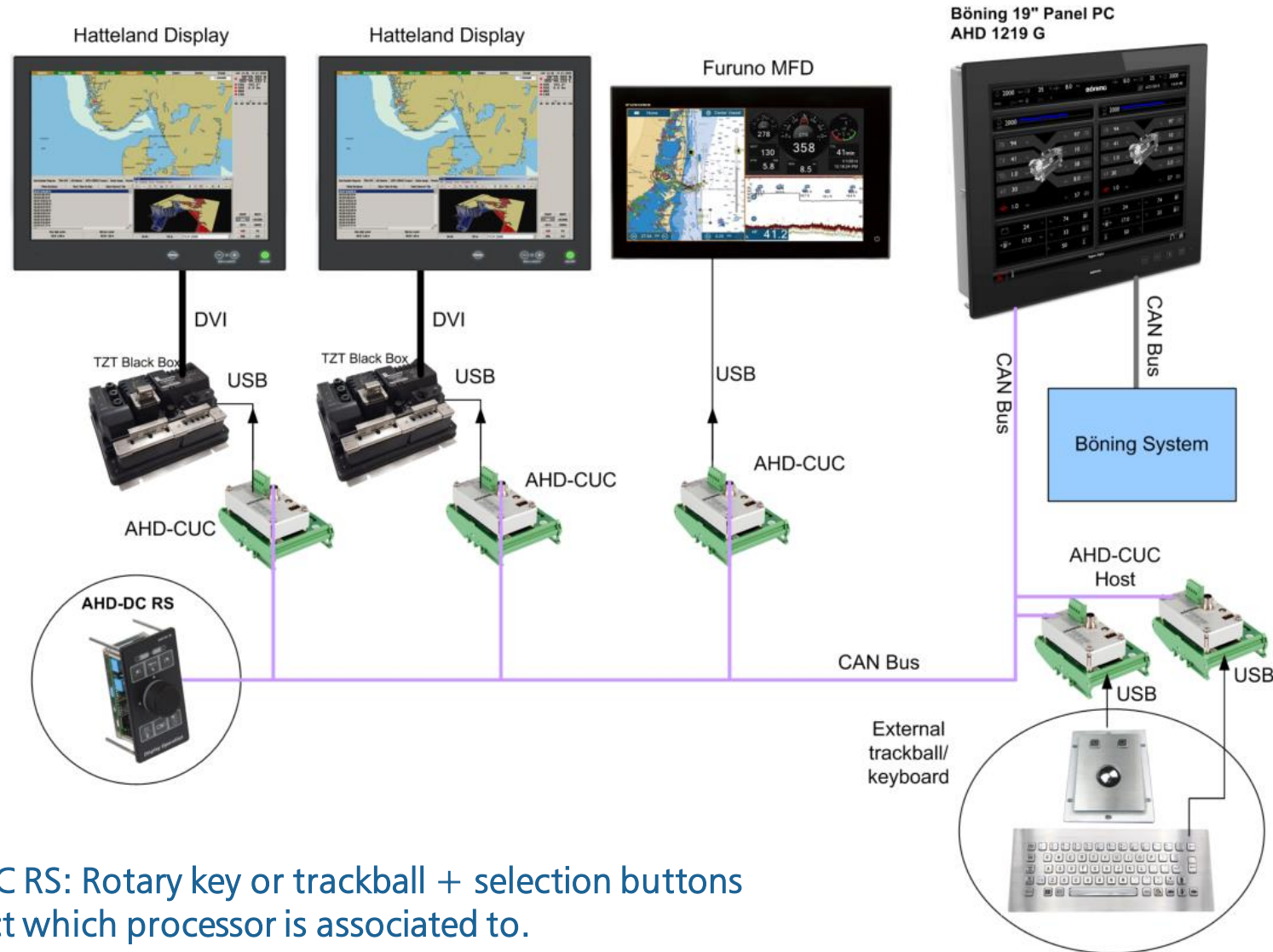
# 1. Multi-screen trackball

Problem: How to make a single keyboard/track ball work on multiple Displays / MFDs / black boxes?



# 1. Multi-screen trackball

Solution: Böning AHD-CUC (CAN USB CONVERTER) and Böning AHD-DC RS control panel



AHD-CUC: converts CAN bus information into USB Mouse signal for the MFDs and black boxes

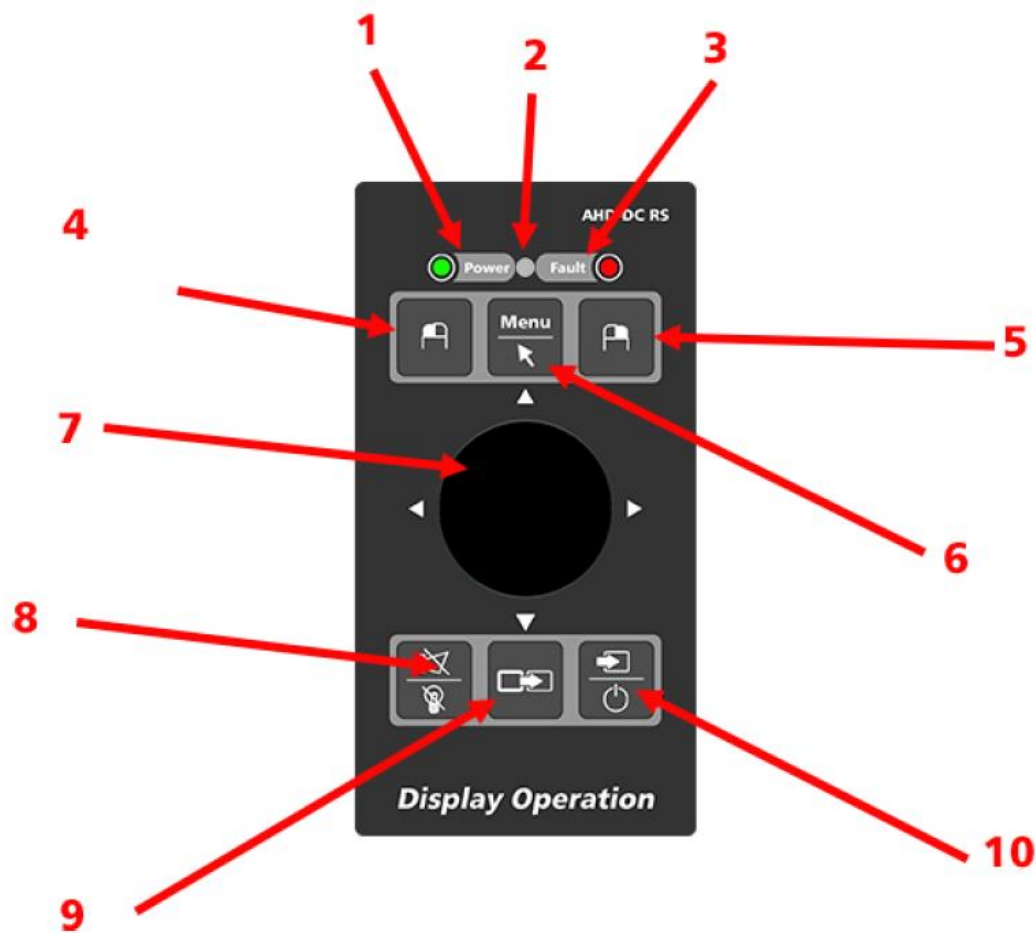
AHD-CUC Host: converts third-party mouse/keyboards to CAN Bus for a multi-screen operation.

AHD-DC RS: Rotary key or trackball + selection buttons to select which processor is associated to.

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# 1. Multi-screen trackball

## Control Elements of the AHD-DC RS



No.	Function
1	Power LED
2	Light sensor
3	Fault LED
4	Key press left
5	Key press right
6	Short press: Direct selection of the main menu on the active PC. Long press: Switch to mouse mode (the key is lit). Another long key press switches back to the menu selection mode.
7	Rotary push drive with shift function. Rotate: Change to the next/previous GUI element. Tilt: Change to the next GUI element in the respective direction
8	Alarm acknowledgment/optical
9	Select the next PC. The selection begins with the device that has the lowest ID, moving to the next one; if the highest ID has been reached, it switches back to the lowest.
10	Short key press: Switch the PC to an external video source for the active display. Long key press: Switches the active display off.

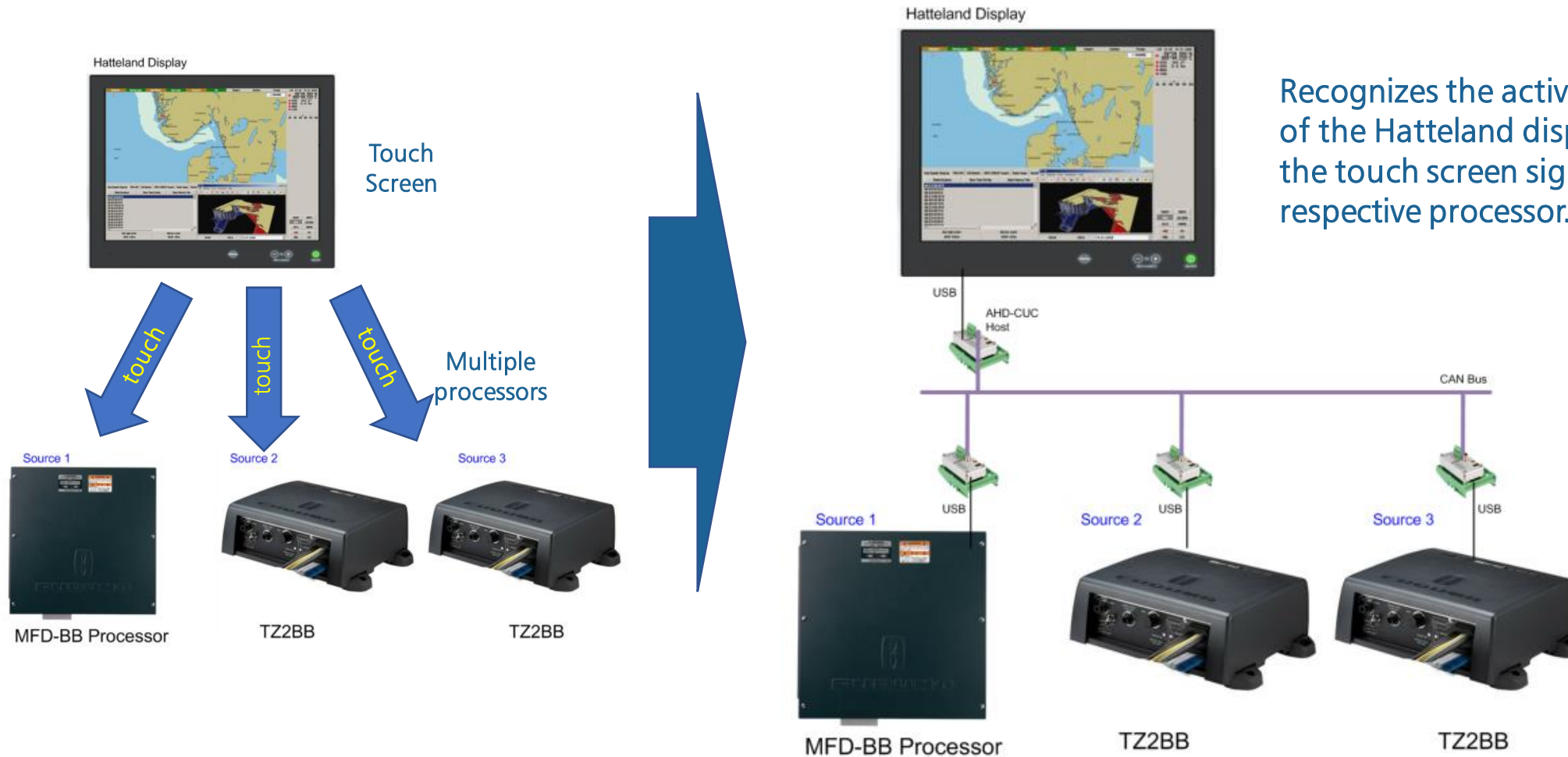


Trackball version also available

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## 2. One screen multiple processors solution

Solves the problem of connecting one touch screen display to multiple sources

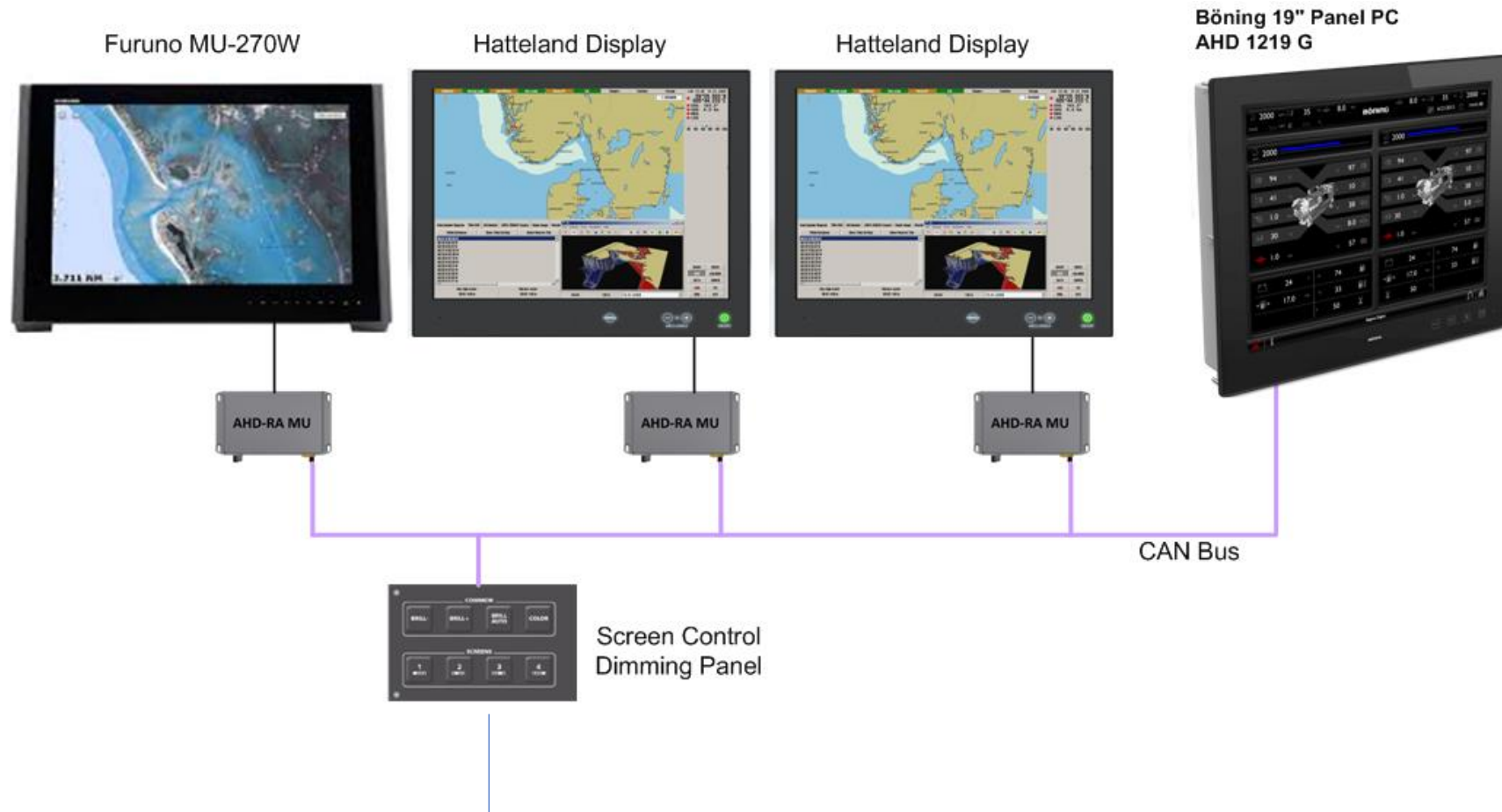


Recognizes the active source input of the Hatteland display and sends the touch screen signal to the respective processor.



# 3. Multi-screen dimming panel

From one (or more) control panel(s), to dim multiple screens at the same time.



## Common Dimming

Access to global dimming settings.  
Local dimming remains available.

## Remote Power On/Off

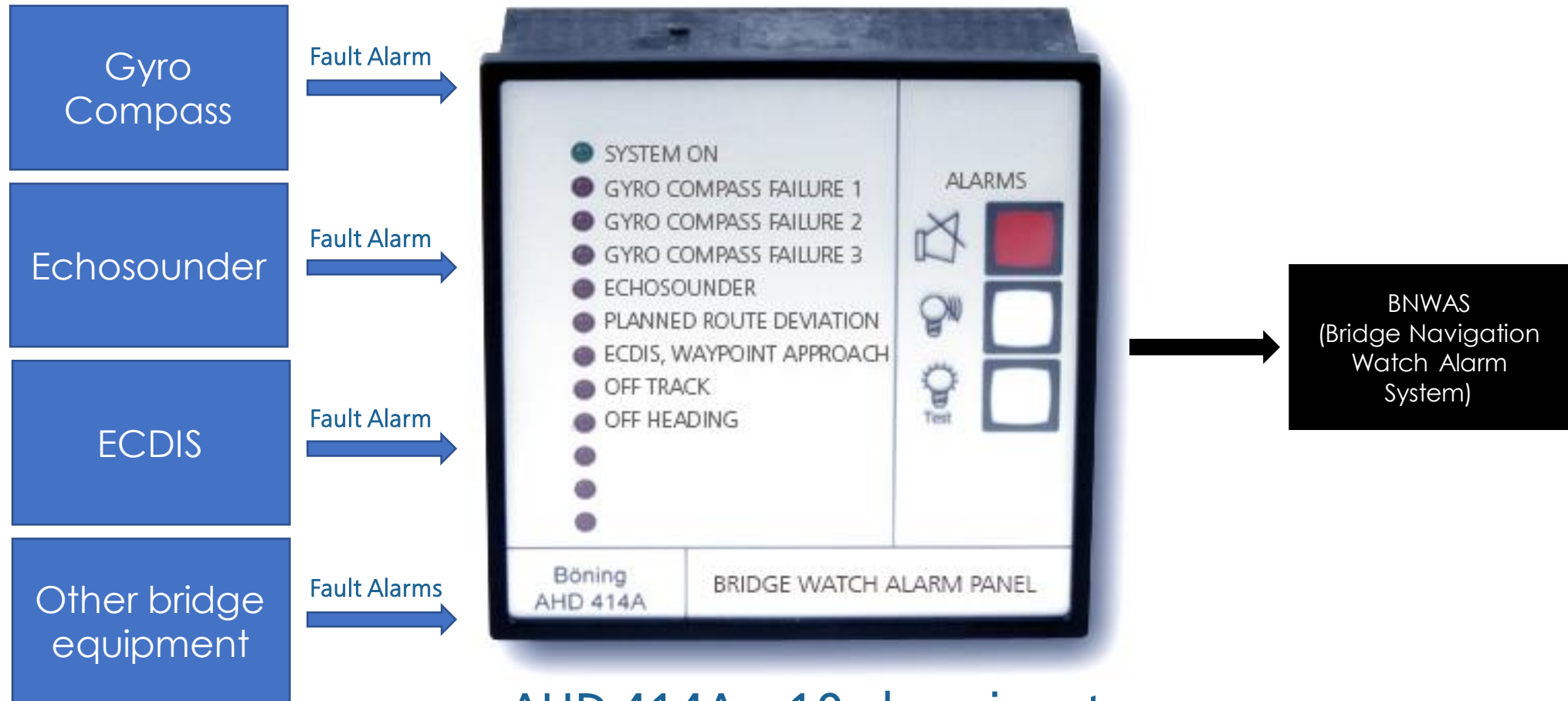
Remotely switches the power of  
monitors on or off.

## Presets

Define presets and dimming  
profiles

# 4. NavCom Bridge Alarm Panel

Simple solution to monitor failure of bridge equipment (with output for BNWAS)



AHD 414A – 10 alarm inputs



# 5. Panel PCs for Nobeltec TimeZero

Displays with embedded PC



AHD 1310G – 10" Panel PC

## Specifications

Panel	10.4" LED, sunlight readable		
Resolution	1024 x 768 Pixel		
Luminosity	1300 cd/m <sup>2</sup> LED		
Contrast	700:1		
Viewing angle	Horizontal: 85°/85°		Vertical: 85°/85°
Power supply	24 V DC (+30%/-25%)		
Power consumption	2 A (24 V DC)		
Interfaces	1 x CAN, 2 x LAN, 2 x USB, 1 x Video-In		
Dimensions	Width: 280 mm	Height: 240 mm	Depth: 107 mm
Weight	approx. 7 kg		
Degree of protection	IP 56 (front) / IP 20 (back) acc. to IEC 60529		
Operating temperature	-30 °C ... +55 °C, Suitable for use on fly bridge (up to +70 °C at console temperature of max. +45 °C) acc. to RMRS Part IV, IEC 60068-2-1, IEC 60068-2-2		
Storage temperature	-50 °C ... +80 °C acc. to RMRS Part IV, IEC 60068-2-1, IEC 60068-2-2		
Vibration	7 m/s <sup>2</sup> acc. to IEC 60068-2-6		
Salt fog	acc. to IEC 60068-2-52		
Approvals	BV (in preparation), DNV GL, LR		



AHD 1319G – 19" Panel PC

## Specifications

Panel	19" LCD		
Resolution	1280 x 1024 Pixel		
Luminosity	1000 cd/m <sup>2</sup> LED		
Contrast	2000:1		
Viewing angle	Horizontal: 89°/89°		Vertical: 89°/89°
Power supply	24 V DC (+30%/-25%)		
Power consumption	approx. 60 W (24 V DC)		
Interfaces	1 x USB-Out, 2 x DVI-In, 1 x VGA-In, Video-In		
Dimensions	Width: 454 mm	Height: 384 mm	Depth: 107 mm
Weight	approx. 12 kg		
Degree of protection	IP 56 (front) / IP 20 (back) acc. to IEC 60529		
Operating temperature	-30 °C ... +55 °C acc. to RMRS Part IV, IEC 60068-2-1, IEC 60068-2-2, DIN EN 60945		
Storage temperature	-30 °C ... +85 °C acc. to RMRS Part IV, IEC 60068-2-1, IEC 60068-2-2, DIN EN 60945		
Vibration	7 m/s <sup>2</sup> acc. to IEC 60068-2-6, DIN EN 60945		
Approvals	BV (in preparation), DNV GL, LR, RMRS, MED compliant A.1/4.30, A.1/4.35, A.1/4.38		

Not for external applications  
with direct sunlight

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# 6. Ultra-wide navigation display

Recommended for overhead installation



AHD 1319 GW – 19" Panel PC  
(includes AHD-DPU 9 interface)

12 o'clock version: view angle from top (dashboard installation)

6 o'clock version: view angle from bottom (overhead installation)

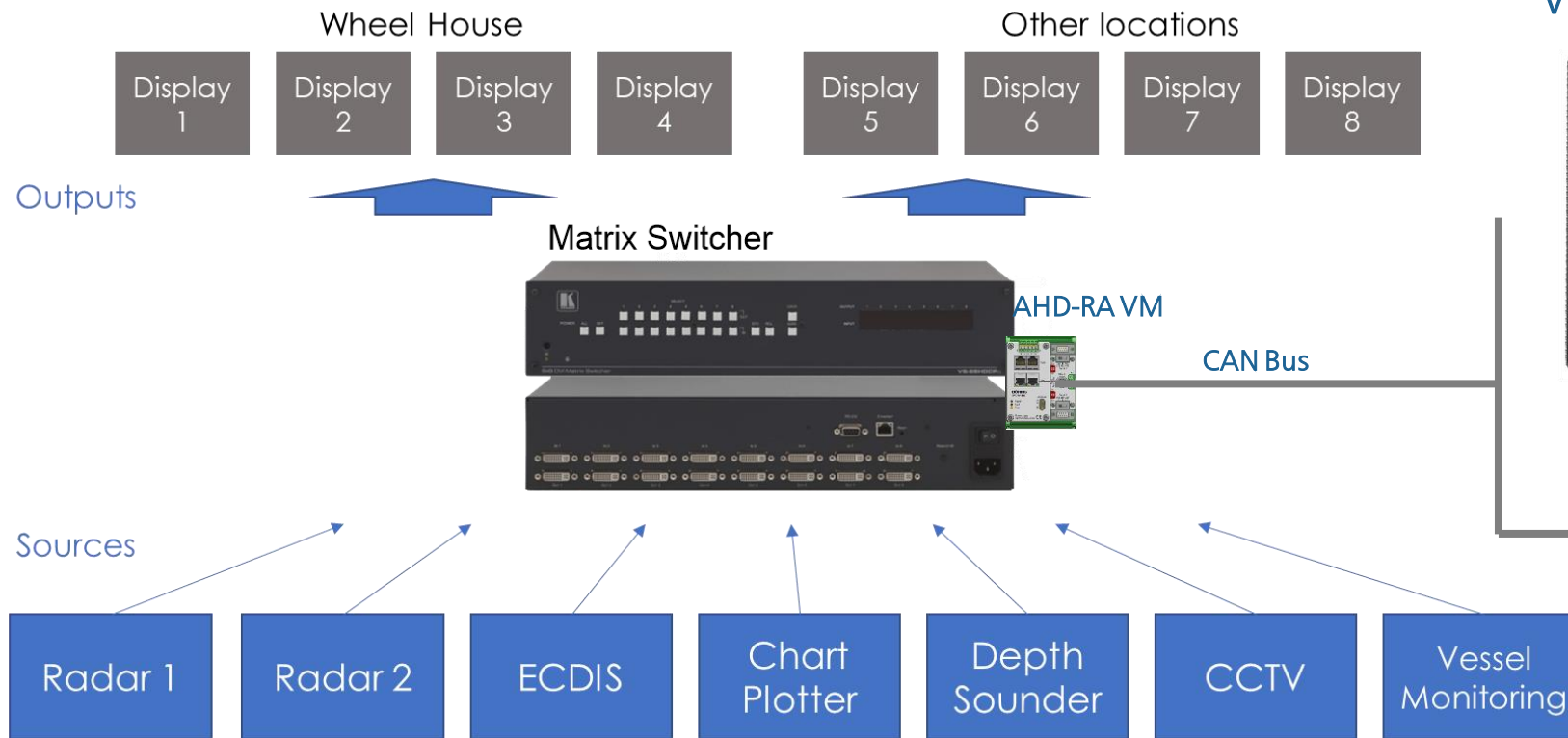
## Specifications

Panel	19.2" LCD LED		
Resolution	1920 x 360 Pixel		
Luminosity	500 cd/m²		
Contrast	600:1		
Viewing angle	Horizontal: 80°/80° Version for overhead mounting:		Vertical: 60°/80° Vertical: 80°/60°
Power supply	12/24 V DC (+30%/-25%)		
Power consumption	max. 2 A (24 V DC)		
Interfaces	1 x CAN, 2 x LAN, 2 x USB, 4 x Video-In (Composite PAL 50 Hz)		
Dimensions	Width: 530 mm	Height: 152 mm	Depth: 87 mm
Weight	approx. 2 kg		
Degree of protection	IP 56 (front) / IP 20 (back) acc. to IEC 60529		
Operating temperature	30 °C ... +55 °C		
Storage temperature	-30 °C ... +85 °C		
Vibration	7 m/s² acc. to IEC 60068-2-6		
Approvals	in preparation		

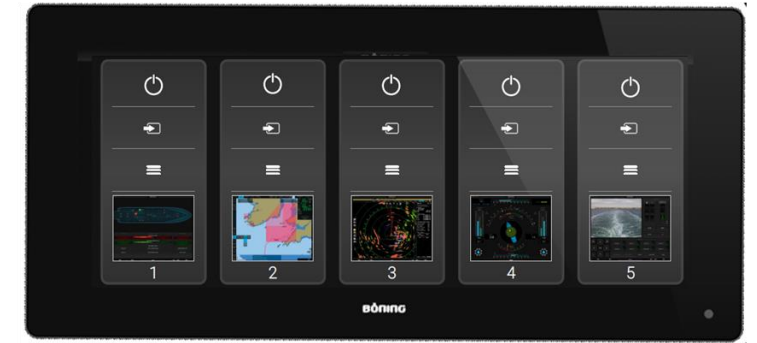
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# 7. Video matrix control panels

Control all bridge displays and processors through one panel



AHD 1312 GW  
Video Matrix Control Touch Screen (12")

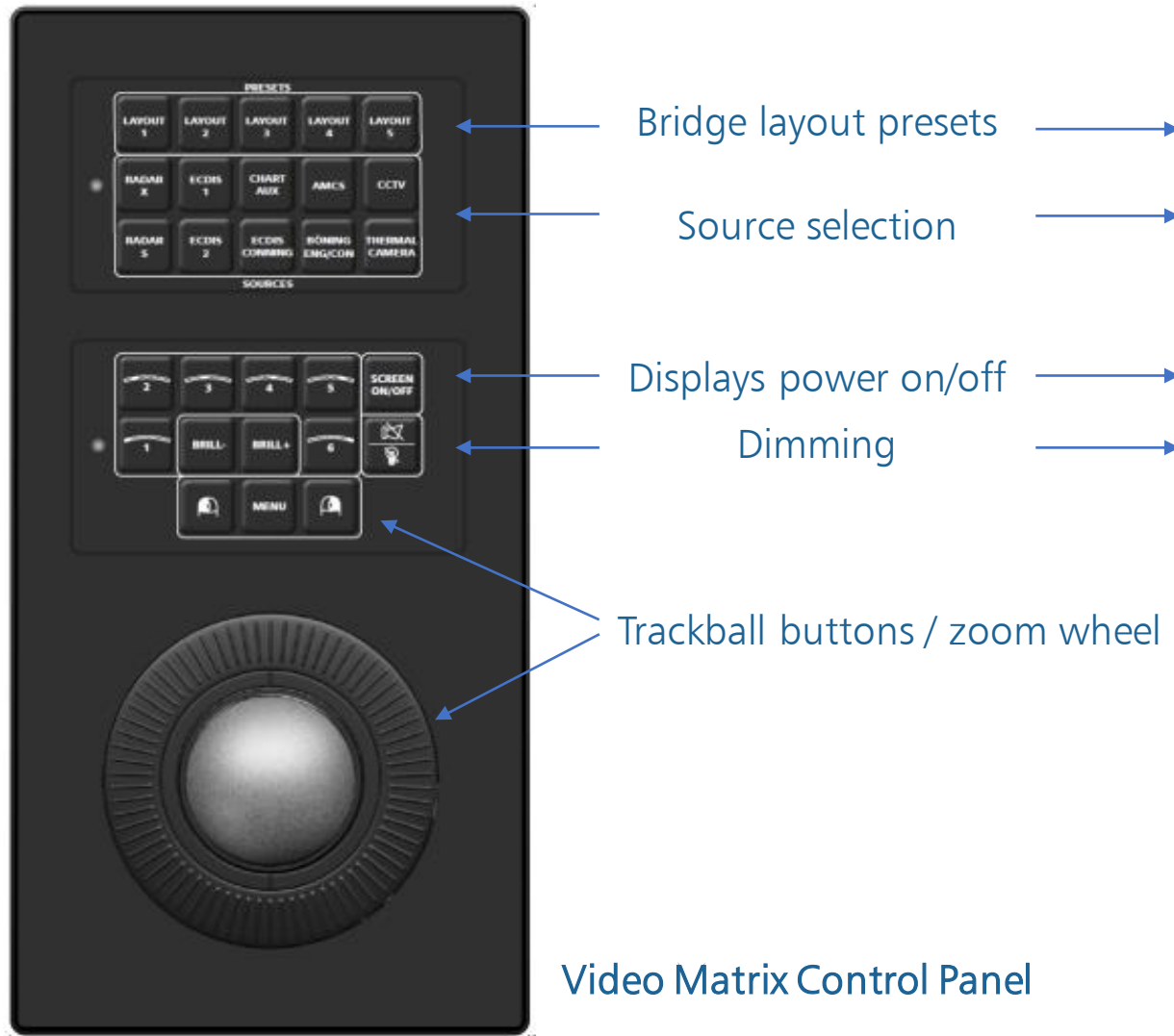


Video Matrix Control Panel

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# 7. Video matrix control panels



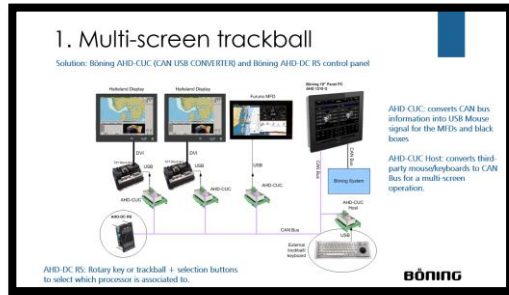
AHD 1312 GW  
Video Matrix Control Touch Screen (12")



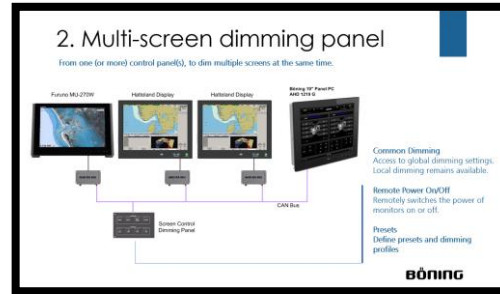
*For multi-screen dimming and control please refer to products 1. and 2. of this presentation.*

# 8. Bridge management system

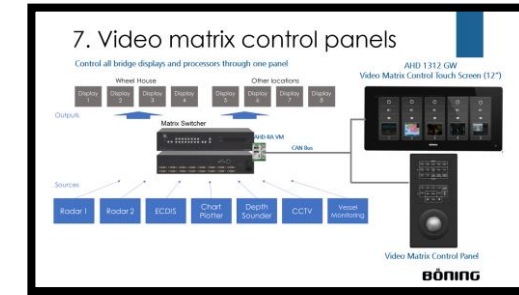
Seamless integration to increase flexibility and usability.



1. Multi-screen control

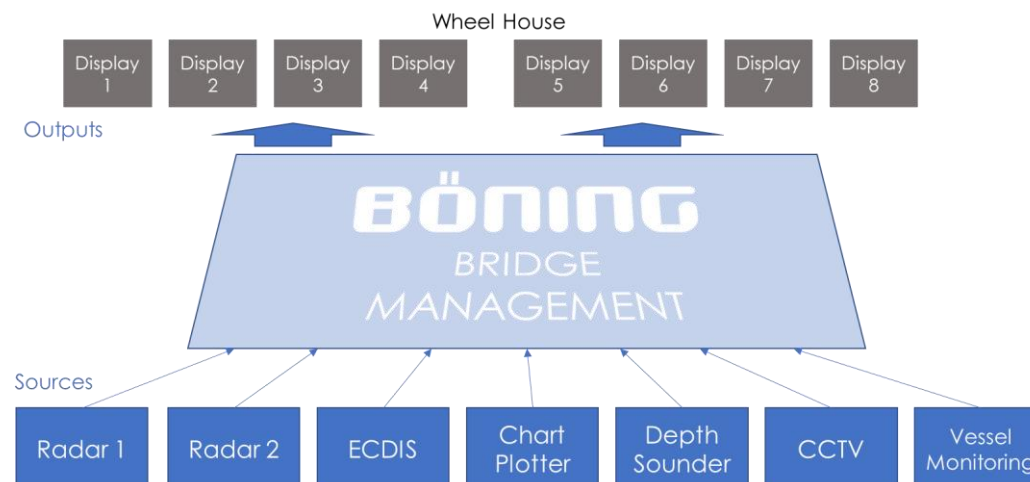


2. Multi-screen dimming



7. Video Matrix Control

**Böning Bridge Management System**



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# 8. Bridge management system

Seamless integration to increase flexibility and usability.



Commercial boats



Pleasure boats

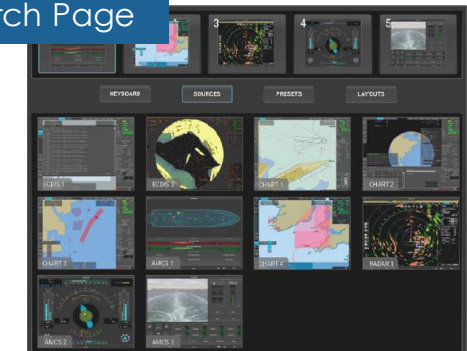
Virtual ECDIS Keyboard



Virtual Radar Keyboard



Video Switch Page



Watch video: [www.boening-usa.com/videos](http://www.boening-usa.com/videos)  
or <https://www.youtube.com/watch?v=GQM3OWMTSQI>



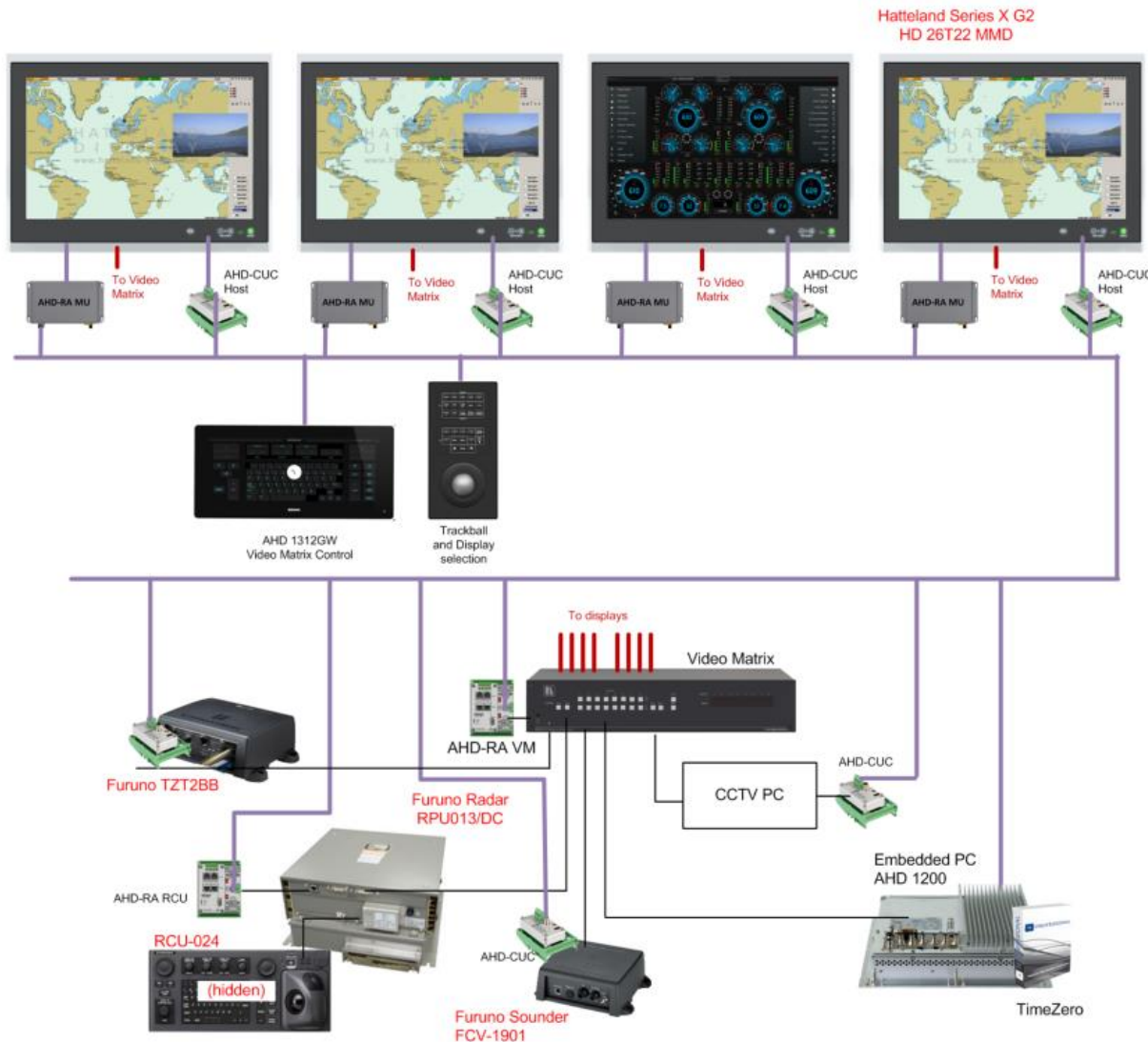
# 8. Bridge management system

Seamless integration to increase flexibility and usability.



100

## Seamless integration to increase flexibility and usability.



## Components

## Adapters to control the sources/ processors via common trackball/ control panel

## Adapters to control the displays

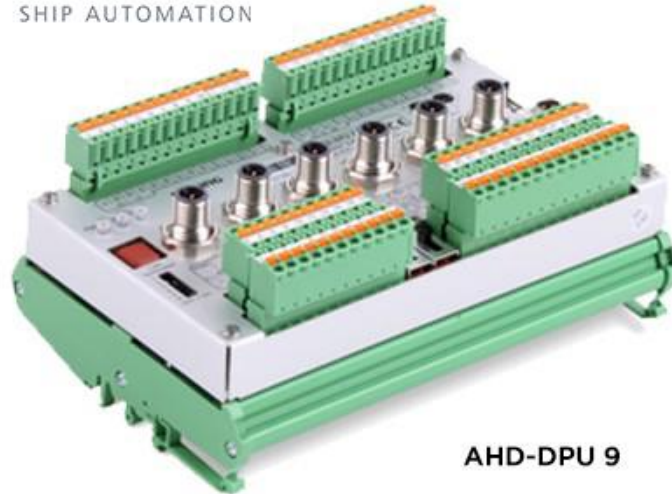
- Common dimming
- Source selection
- Power on/off

## Video Matrix

## Video Matrix Control Panels

# 9. Universal marine interface converter

Reliable way to convert ship's data to NMEA 2000 (engines, generators, chargers, switchboard, etc...)



AHD-DPU 9

CERTIFIED

DNV·GL



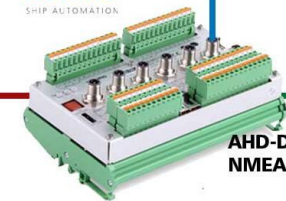
## Technical Data

Power Supply	24 V DC (+30% -25%)
Current Consumption	Ca. 170 mA (24VDC)
Environmental Temp.	-30°C... + 70°C
Storage Temperature	-50°C... +85°C
Weight	appr. 0.7 kg
Protection Class	IP 20
Overall Dimensions (mm)	188 x 126 x 63
Interfaces	28 x binary input/output channels (optocoupler, serial, static) 6x CAN (galvanically isolated, termination and address) 1x LAN (RJ45, 10/100 MBit) 1x serial (RS232/RS485) 2x serial (RS232/RS485/RS422, switchable, termination switchable)
Inputs	4x optocoupler (alarm acknowledgement, optional special functions)
Outputs	5 x relay output (galvanically isolated, 2x contact 2-pin, 3x contact 1-pin)
Approvals	GL (IAMC System) RS
Required distance to compass	Standard magnetic compass: 55 cm Steering magnetic compass: 40 cm



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SHIP AUTOMATION

NMEA 2000



AHD-DPU 9  
NMEA converter

PS ENGINE BUS

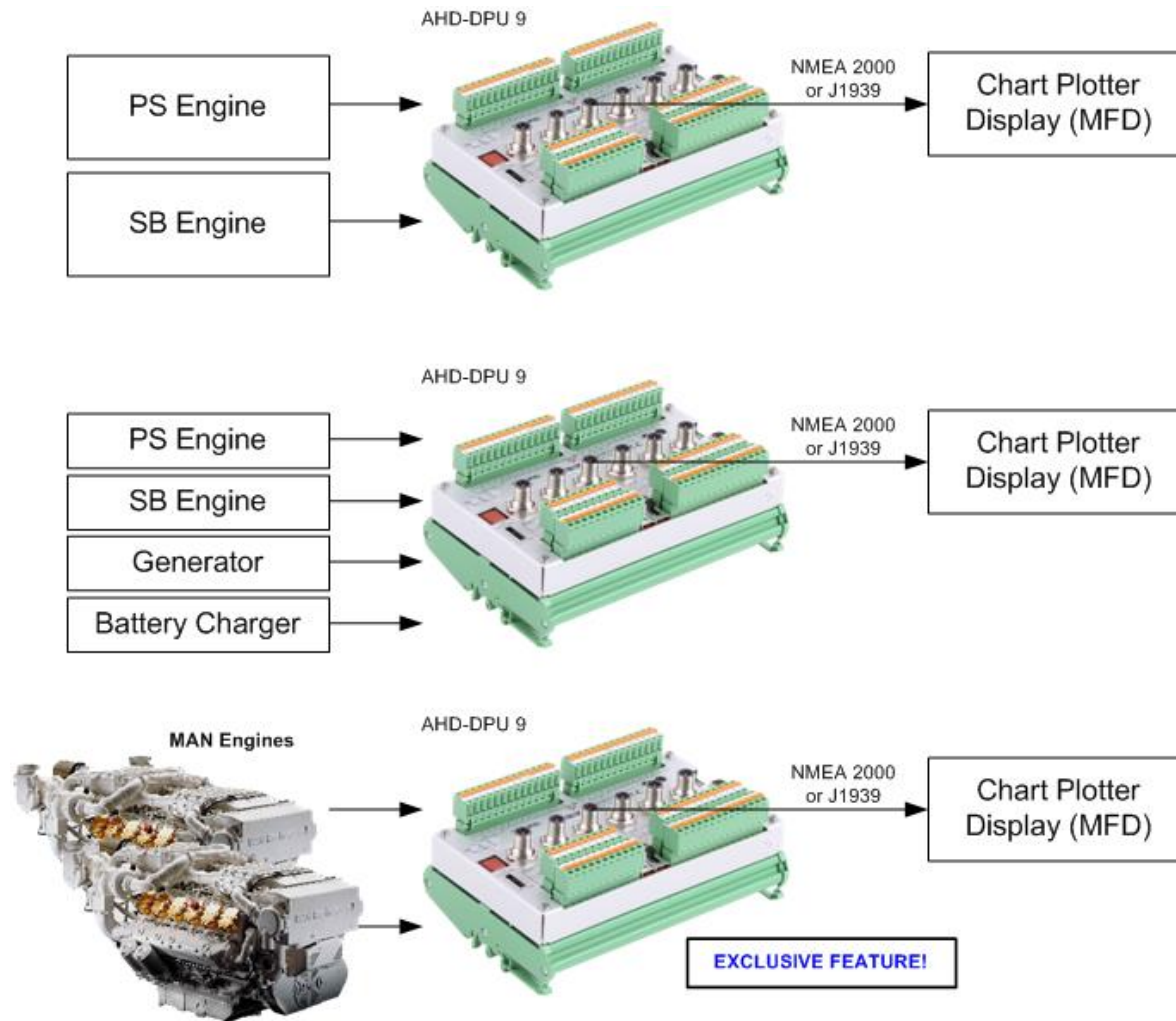


STBD ENGINE BUS





# 9. Universal marine interface converter



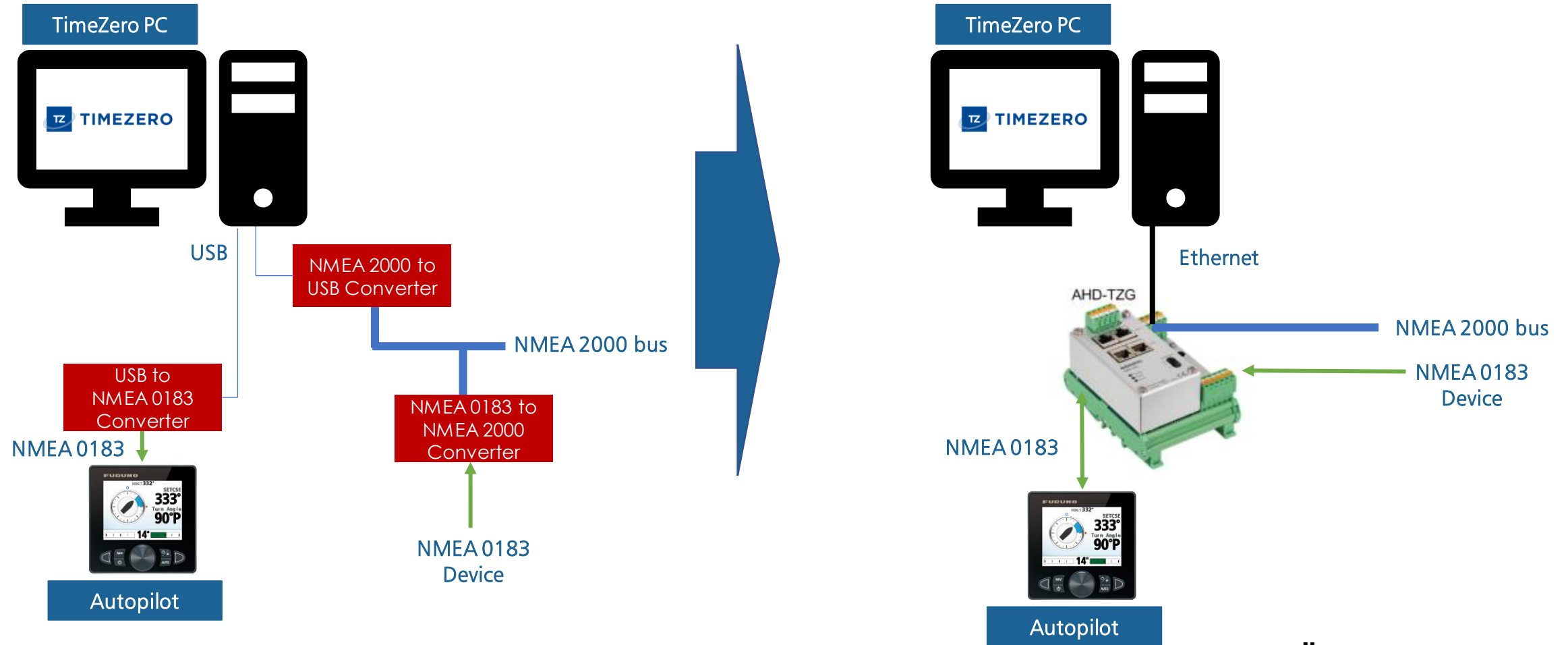
AHD-DPU 9 is a universal data station, capable of converting CAN Bus and serial data to protocols compatible with MFD (Multifunctional displays), of many different brands, such as Garmin, Furuno, Raymarine, SimRad, etc.

The AHD-DPU 9 can concentrate data from engine, generators, charges, or any other device on board with an open protocol, such as NMEA 2000, J1939, ModBus, NMEA 0183, etc.

**EXCLUSIVE FEATURE:** the AHD-DPU 9 is compatible with the MAN Engines proprietary protocol.

# 10. TimeZero Gateway for NMEA

AHD-TZG: designed to interface with the TimeZero PC and Autopilot, converting NMEA data  
Eliminates the use of multiple converters.



# 11. Navigation Lights Panel

Modular Control Panel for up to 42 lights (LED or bulb) – with customizable mimic panel



The modular-designed AHD-DPS02 controls and monitors navigation and signal lights on vessels.

Features:

- Modular design (from 14 to 42 lights)
- Control panel with custom layout
- Maintenance-free: no need to replace fuses after a short circuit
- Record operating hours and the number of switching cycles
- Collective alarm and ModBus interface to integrate with third-party alarm systems
- Compatible with AC or DC lights, bulbs or LEDs.

Certificates:



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# 11. Navigation Lights Panel

Modular Control Panel for up to 42 lights (LED or bulb) – with customizable mimic panel



Compatibility Table			
System	Current Range	Voltage Range	Frequency Range
230 VAC	20mA...300mA (ca. 5W...65W at 230VAC)	140...240V	47-65Hz
115 VAC	20mA...600mA (ca. 3W...65W at 115VAC)	80...130V	47-65Hz
24 VDC Bulb	200mA...2500mA (ca. 5W...65W at 24VDC)	18...32V	
24 VDC LED	15mA...800mA (ca. 0,5W...20W at 24VDC)	18...32V	

Control panel dimensions:

- 150 x 150mm
- 150 x 294 mm

Certificates:



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# 12. Whistle Control Panels

AHD-WOP and AHD-GAP F – Whistle operation panels



## AHD-WOP – Whistle Operation Panel

The whistle operation panel AHD-WOP is designed for the control and operation of one or more whistles on board ship, providing pre-programmed outputs for most frequently used sound signals for maneuvering and warning, as well as sound signals in restricted visibility according to "Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs)" inclusive amendments.

### Features:

- Dimension W x H x D 70 x 130 x 45 mm
- Outputs:
  - 2 x Horn relay for whistle control perm. contact load  
24VDC (+30%/-25%) / 0,5A
  - 2 x Lamp relay for signal light control perm. contact load  
24VDC (+30%/-25%) / 0,5A
- Certificate:



# 12. Whistle Control Panels

AHD-WOP and AHD-GAP F – Whistle operation panels

## AHD-GAP F - General Alarm Panel with Fire Alarm Function

The control panel AHD-GAP F is designed for the control of acoustic and optical signals in emergency situations. In addition to the manual activation of the horn, common mandatory signals such as "Abandon Ship", "General Alarm," and "Fire Alarm" are already hard-coded and can be activated in selectable intervals.

Features:

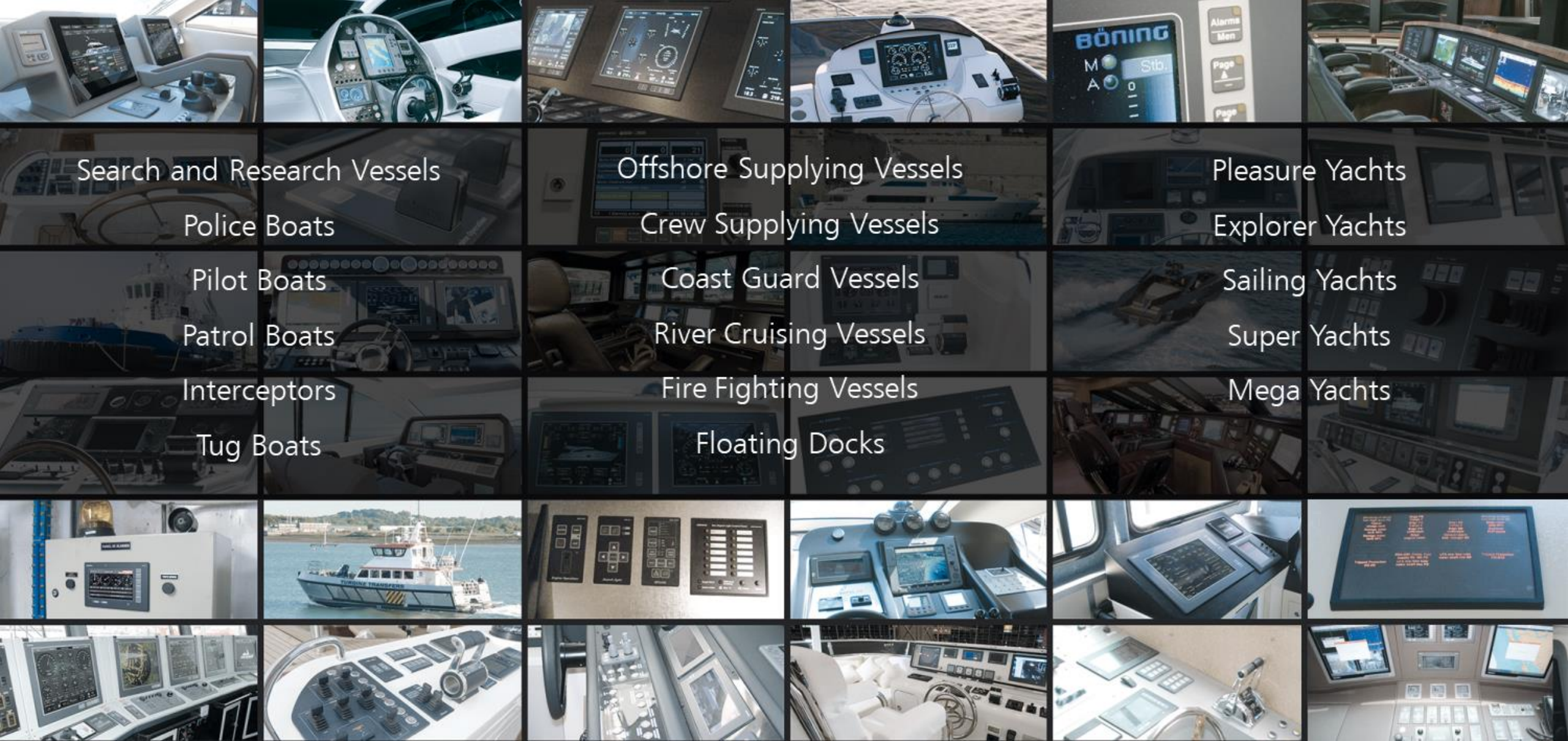
- Dimension W x H x D 70 x 130 x 45 mm
- Outputs
  - 4 x relay for acoustic and visual signal control potential-free admissible contact load 0.5 A
  - 1 x relay for status indication, potential-free, admissible contact load 0.5 A
- Signal Sequences General Alarm (7x short, 1x long) Abandon Ship (short, long, short, long)
- Fire Alarm (continuous sound)
- Manual Operation (push-button)

Certificate:



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# References

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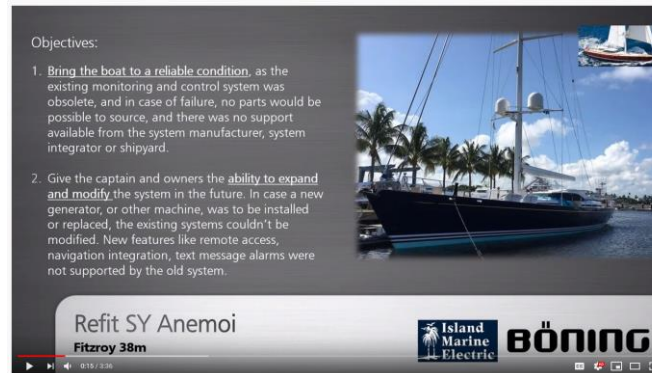
# Links [www.boening-usa.com/videos](http://www.boening-usa.com/videos)

## CORPORATE VIDEO



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=QVMXZTYM81W](https://www.youtube.com/watch?v=QVMXZTYM81W)

## REFIT OF A 38M YACHTS



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=MHPFUFPEADU](https://www.youtube.com/watch?v=MHPFUFPEADU)

## DEMO CABIN CONTROL



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=TZXK2J40MIS](https://www.youtube.com/watch?v=TZXK2J40MIS)

## YACHT REFERENCES



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=FBZWYWFRMUY](https://www.youtube.com/watch?v=FBZWYWFRMUY)

## REVIEW FROM BOATTEST.COM



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=YFXH3OHMLLE](https://www.youtube.com/watch?v=YFXH3OHMLLE)

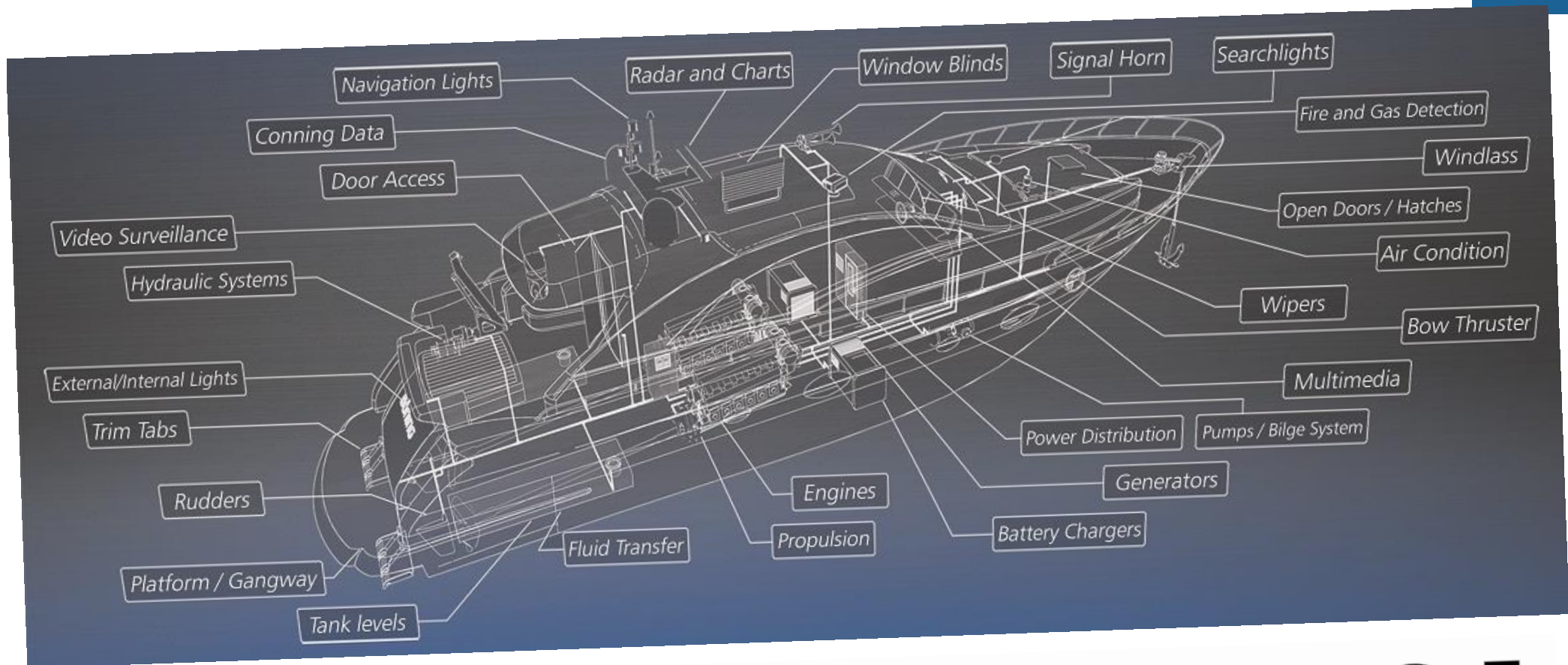
## 55" BRIDGE ON FISHING VESSEL



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=GQM3OWMTSQI](https://www.youtube.com/watch?v=GQM3OWMTSQI)

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