

Systems and Devices for Automation of Ships
Monitoring and Control Technology



Company Presentation





- ✓ Specialist in Alarm, Monitoring and Control Systems for yachts and commercial boats
- ✓ Since 1977 developing electronic devices for shipbuilding industry
- ✓ One of the Top Companies in the market
- ✓ Over 15,000 yachts and commercial boats with Böning devices

Company Profile

Böning Automation Technology



Administration



Engineering and Sales



Manufacture



Training and Exhibition

Company Profile

Böning Automation Technology



- Founded in 1977
- Located in Ganderkesee, next to Bremen (Germany)
- More than 100 employees (20% developing engineers)
- More than 20 000 devices produced per year
- Approx. 700 ships with Böning technology are put in operation every year

Company Profile

Böning Automation Technology





Quality Management



SMD Production Line



Selective Soldering System



Assembly Stations

Production

Böning Automation Technology



In-House Production

- Better quality and productivity
- Ability to respond to new demands
- Reliability

Production

Böning Automation Technology



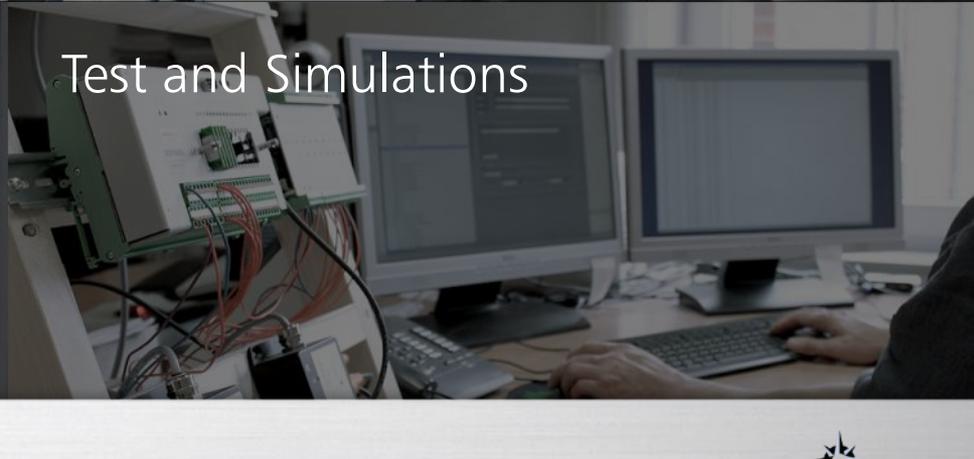
EMC Laboratory



AOI System



Climatic Chamber



Test and Simulations

Quality Assurance
Böning Automation Technology



Made in Germany

- Numerous facilities
- In-house laboratories
- Testing environments

Quality Assurance
Böning Automation Technology



Hardware

Firmware

Software

Production

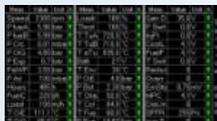
Engineering

Certification

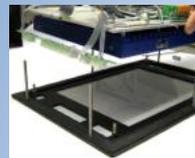
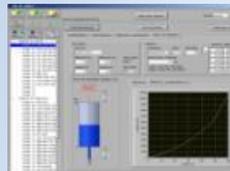
Electronics



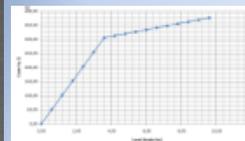
Mechanics



ConfigTool



Item	Werkzeugtyp	Material	Materialtyp
1	Werkzeugtyp	Material	Materialtyp
2	Werkzeugtyp	Material	Materialtyp
3	Werkzeugtyp	Material	Materialtyp
4	Werkzeugtyp	Material	Materialtyp
5	Werkzeugtyp	Material	Materialtyp
6	Werkzeugtyp	Material	Materialtyp
7	Werkzeugtyp	Material	Materialtyp
8	Werkzeugtyp	Material	Materialtyp
9	Werkzeugtyp	Material	Materialtyp
10	Werkzeugtyp	Material	Materialtyp
11	Werkzeugtyp	Material	Materialtyp
12	Werkzeugtyp	Material	Materialtyp
13	Werkzeugtyp	Material	Materialtyp
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17	Werkzeugtyp	Material	Materialtyp
18	Werkzeugtyp	Material	Materialtyp
19	Werkzeugtyp	Material	Materialtyp
20	Werkzeugtyp	Material	Materialtyp



Lloyd's Register



DNV



All certificates are available for download at: www.boening.com

Product Development Chain

Böning Automation Technology





Germany

Mallorca

Italy

Croatia

USA

Brazil

Subsidiaries and Representatives

Böning Automation Technology



Subsidiaries and Representatives

Böning Automation Technology



Owned 100% by Böning Germany
Foundation: 2014
Location: Boca Raton - Florida



- Responsible for North-American market
- Activities:
 - ✓ Local customer support
 - ✓ Sales and local project development
 - ✓ Stock of parts / sales of spare parts
- Service:
 - ✓ Repair and maintenance
 - ✓ Installation, tests, commissioning
 - ✓ Technical support 24x7

Local Presence

Böning Automation Technology





Lloyd's Register



BUREAU VERITAS



GL Systems Certification

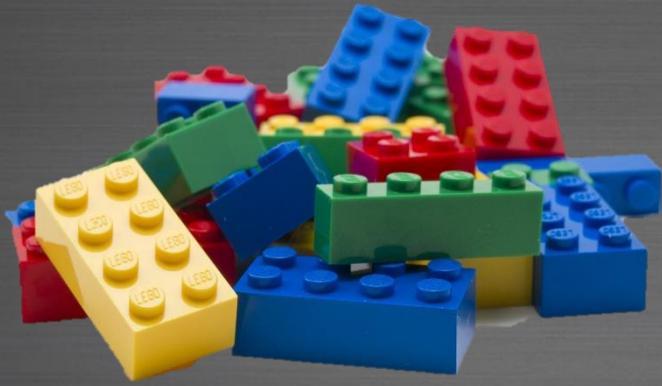


Certified Systems
Böning Automation Technology



Böning Advantages





The system can be built in modules, which can be included in steps or phases.

More sensors or functions can be included after the initial outfitting, according to the customer's needs and plans.

Example:

- Phase 1: Module for Tanks monitoring
- Phase 2: Module for Navigation Lights control
- Phase 3: Module for Generators monitoring

1.

Tank Levels

Fuel, water, oil, and other resources are carried along in tanks most of the time – as well as waste water and sewage. Bar graphs display the tanks' filling states.

Also available:
Tank spill warning gauges for outdoor installation.



2.

Navigation Lights

The modular system controls and monitors up to 42 navigation and signal lanterns on board vessels. It can be matched to customer specific requirements. Available in different versions for all customary voltages, the system can be used with conventional or LED lanterns.

The lanterns are controlled with an operation panel, which provides one operation button and one LED status light for each lamp circuit.



3.

Generators

On-board power grid monitoring, including the generator engine data, the performance values, fault alarms, and load distribution.



Modular, Expandable and Upgradable
For new builds and refits

Open Software and Configuration

Böning Partners, Integrators and Dealers can be trained to program the Böning Systems themselves, and develop their own customized solutions for their customers.

Configuration Software are free and are provided to our Partners. Service Cable Kits are sold for Partners and Customers.



Remote technical assistance

Böning team is prepared to assist Service Partners to configure or troubleshoot the Böning Systems remotely via Team Viewer.



Open Software and Configuration

For the best development and after-sales

AHD-WNA (Web'N'Access)

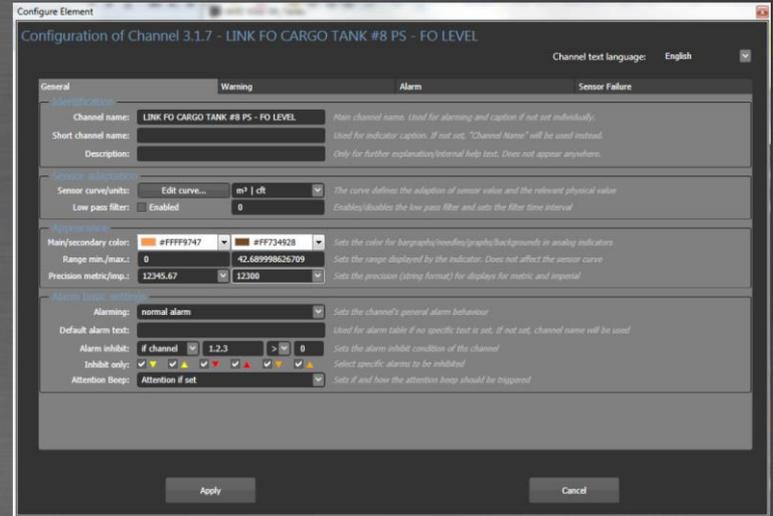


Technical Support Everywhere

Böning Customers are able to get Support via Remote Access to the Böning System.

Flexibility and fast response

Adjustments and calibrations can be done without the presence of a Böning Technician on board.



After-sales support
Via Remote Access

Ship Automation Systems





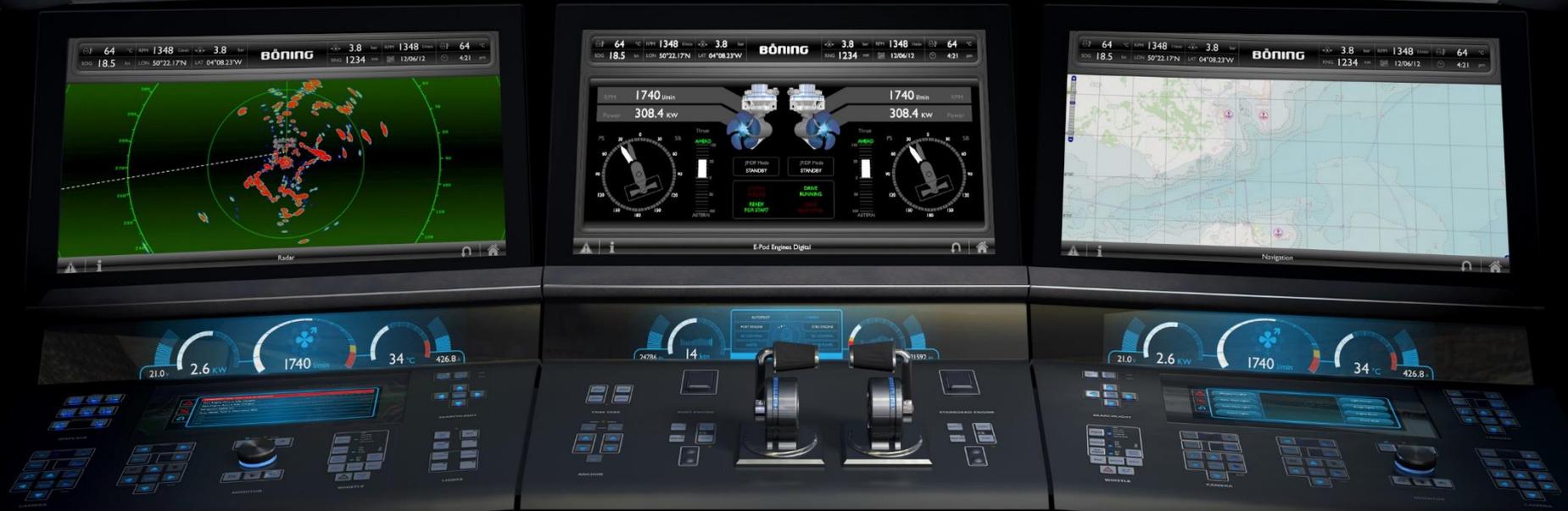
System Integration

Böning Automation Technology



Integrated Bridge Concepts

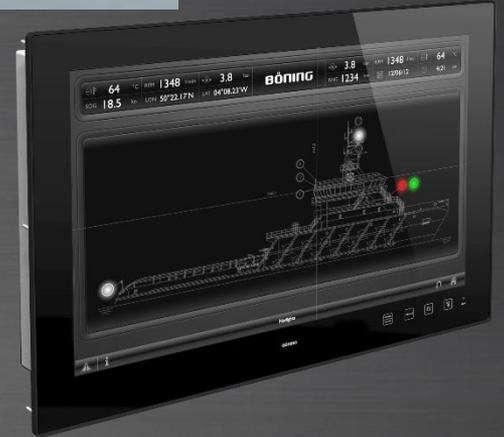
BIBS – Böning Integrated Bridge Systems



Integrated Bridge Concepts

BIBS – Böning Integrated Bridge Systems

Our Panel PC Systems – Ordered by Size.



PC-Based Multifunctional Displays

Order by size



AHD 430
4.3"



AHD-514
5"



AHD 651
6.5"



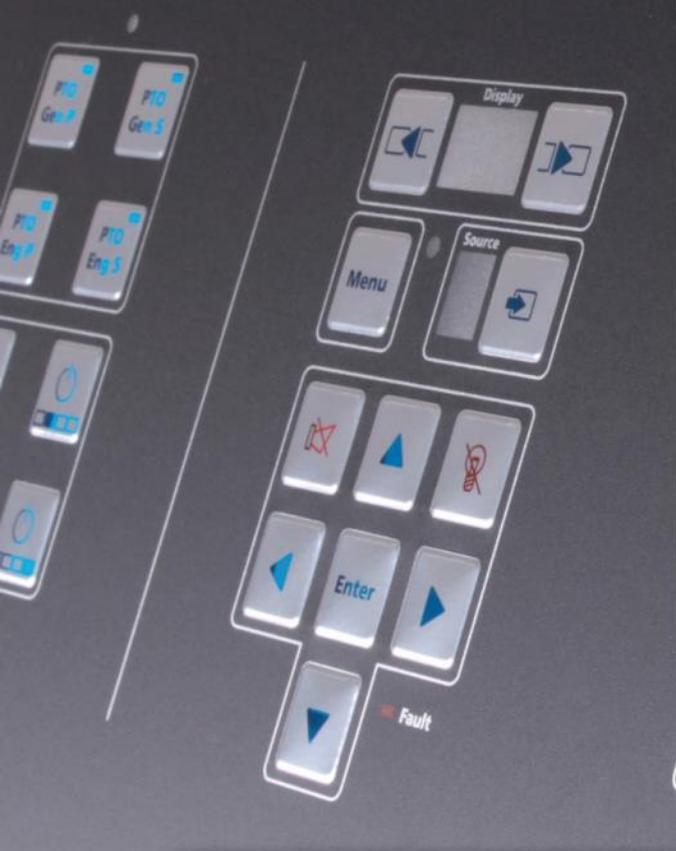
AHD 880
8.8"

AHD 1319



Maritime Displays

Order by size



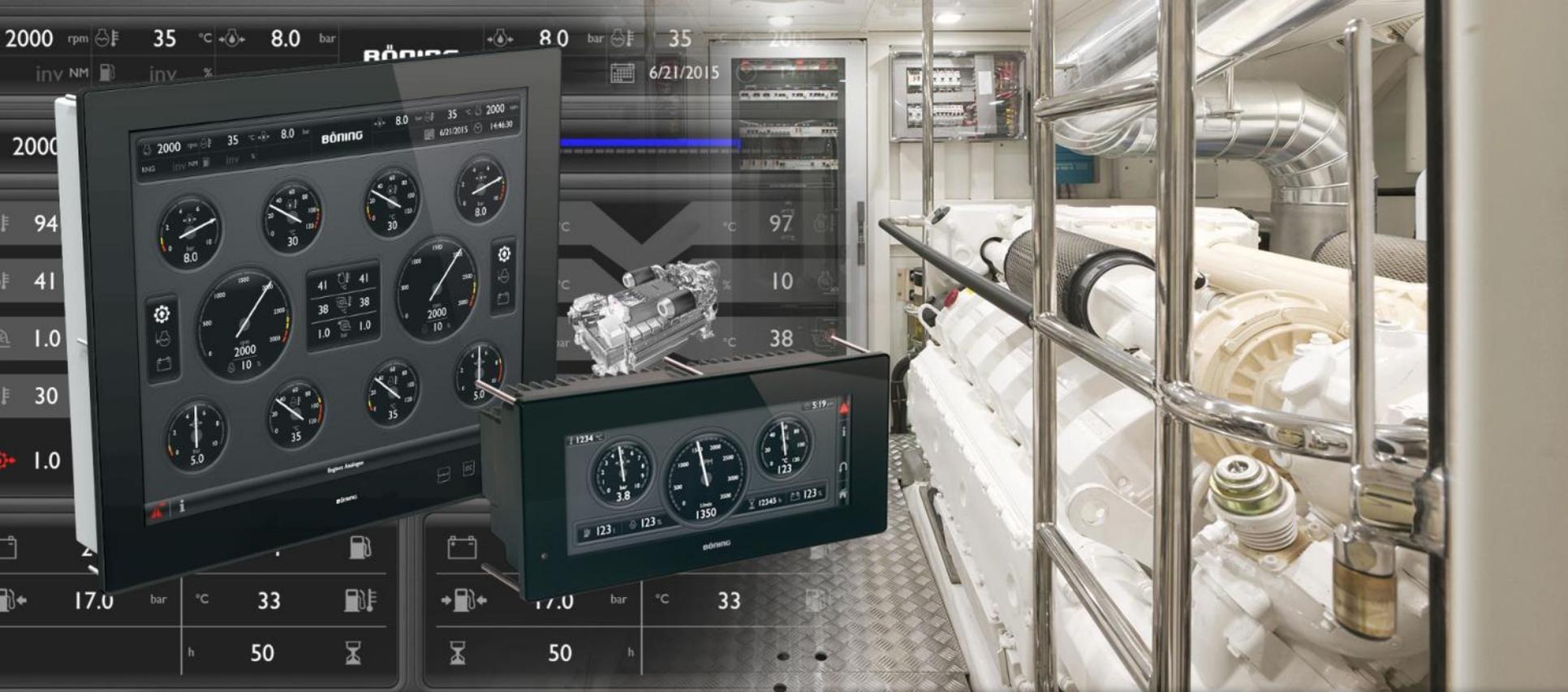
Operation Panels

Unified design makes the vessel's operation on the bridge clearer



Operation Panels

Unified design makes the vessel's operation on the bridge clearer

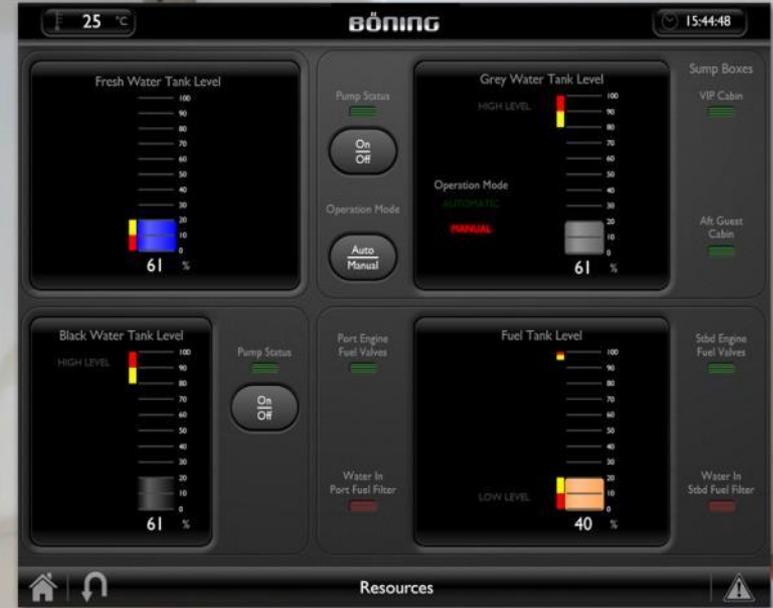


Engine Monitoring Systems

Presenting detailed engine data clearly to the operator



Ship Data on Tablet, Notebook or Desktop PC
Remote access and maintenance available everywhere



Overview of the Ship's Resource Levels

Fuel and water tanks monitoring with pumps control



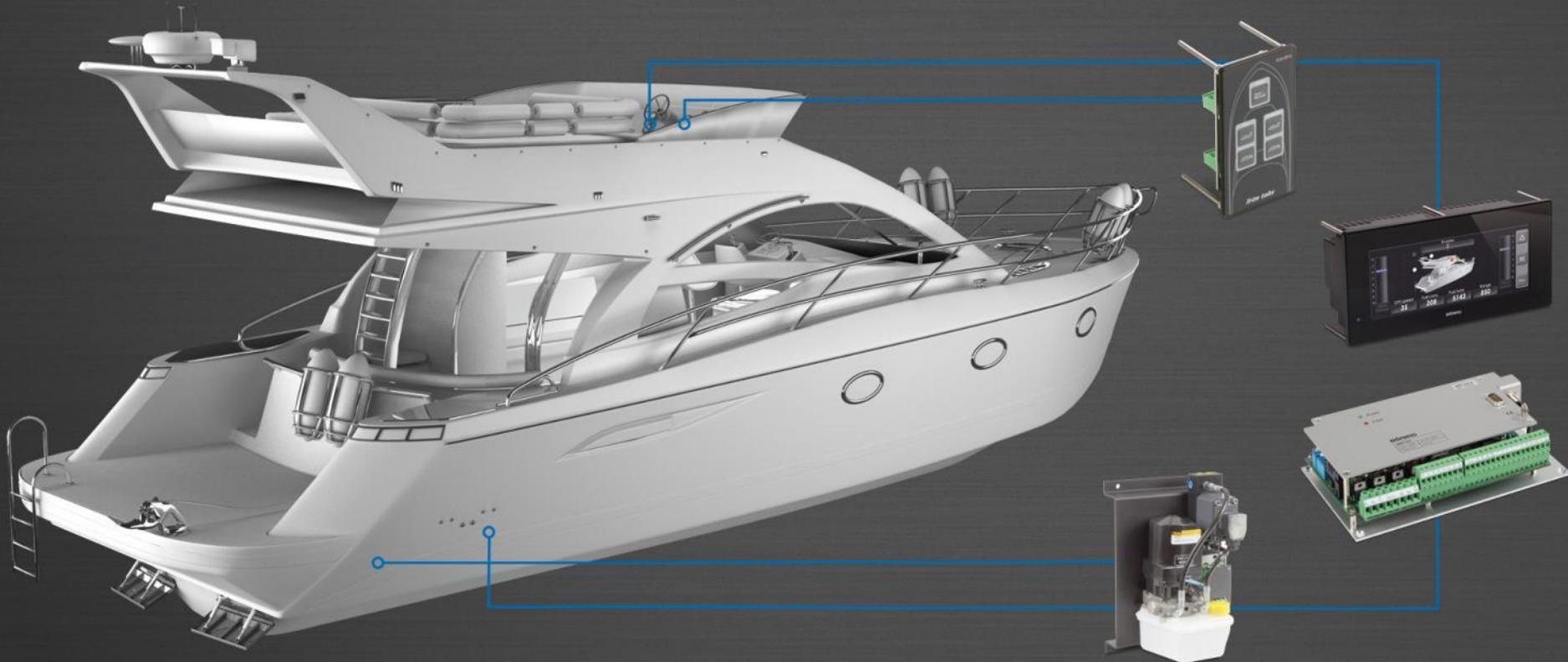
Navigation Lanterns Control

Modular systems for all customary voltages on board



Engine Start/Stop Systems

Transponder technology is protecting against unauthorized operation



Trim Tabs Control System

Developed and patented by Böning for the safe control of fast yachts



AHD-WAOP S



Emerg. Call - Hold for 5 sec.



Watch Alarm

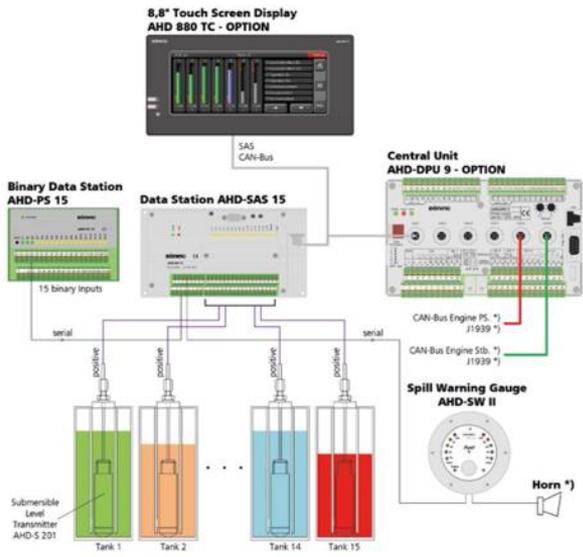
Watch Alarm Panels (BNWAS)

Meets the requirements of BNWAS according to IEC 62616-1



Lighting Control via Touch Screen

Electronic circuit breaker with dimmer function



Tank Level Monitoring and Fuel Consumption

For vessel's fuel consumption management



CCTV Video Integration

Camera control via touch screen or remote control

Tank Level Transmitters
(Diesel, Water, Black Water,...)
Level Switches
Pressure Transmitters
Bilge Level Sensors
Temperature Transmitters
Resistance Thermometers
Exhaust Gas Temp. Sensors
Inclination Sensors
Transducers
Smoke detectors
Movement Detectors



Sensor and transducers

Solves all monitoring problems on board

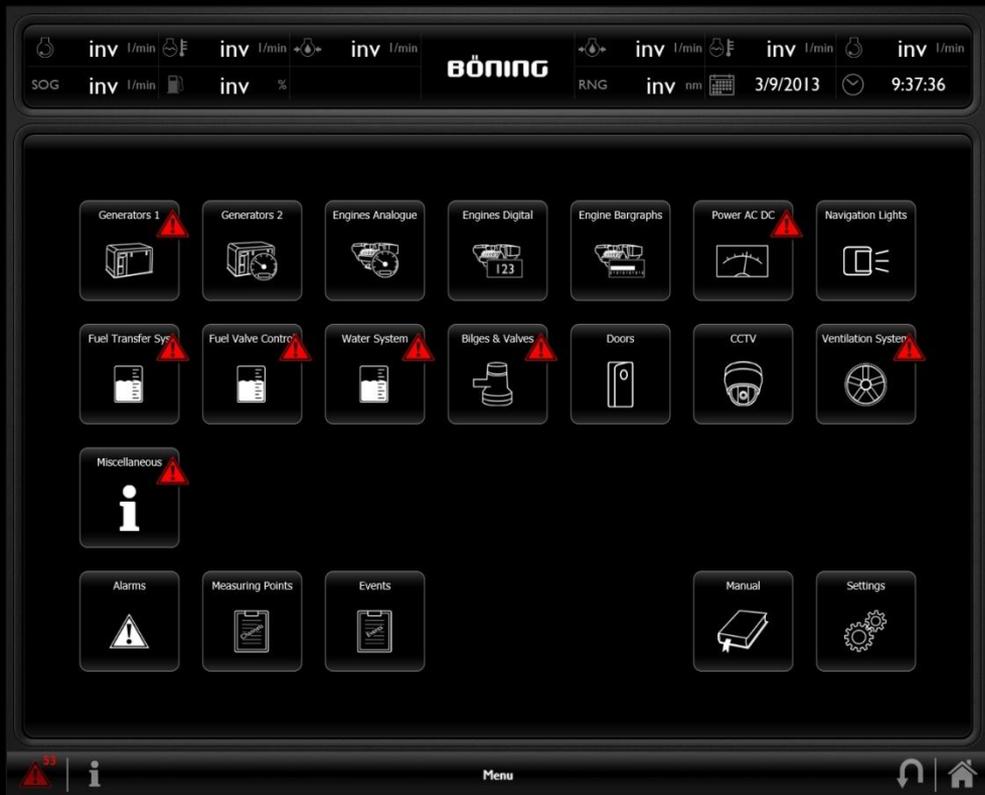
Visualization Screenshots





Visualization examples

Portfolio with standard and customized pages



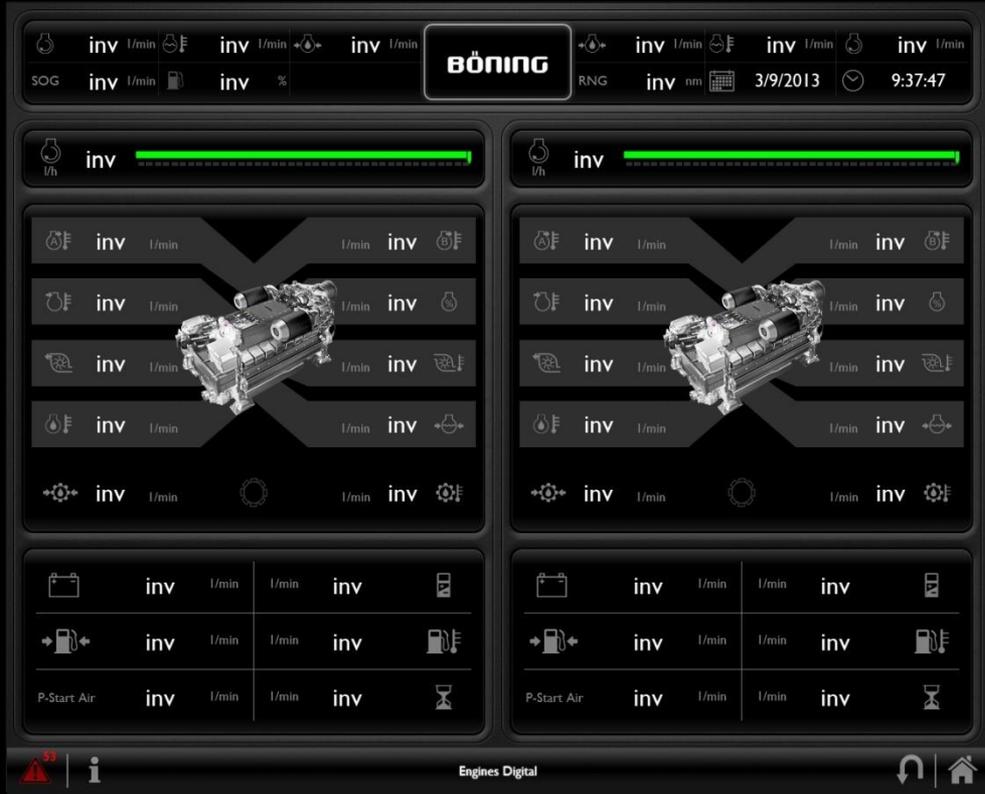
Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

Portfolio with standard and customized pages

BÖNING

DEFAULT

SEARCH

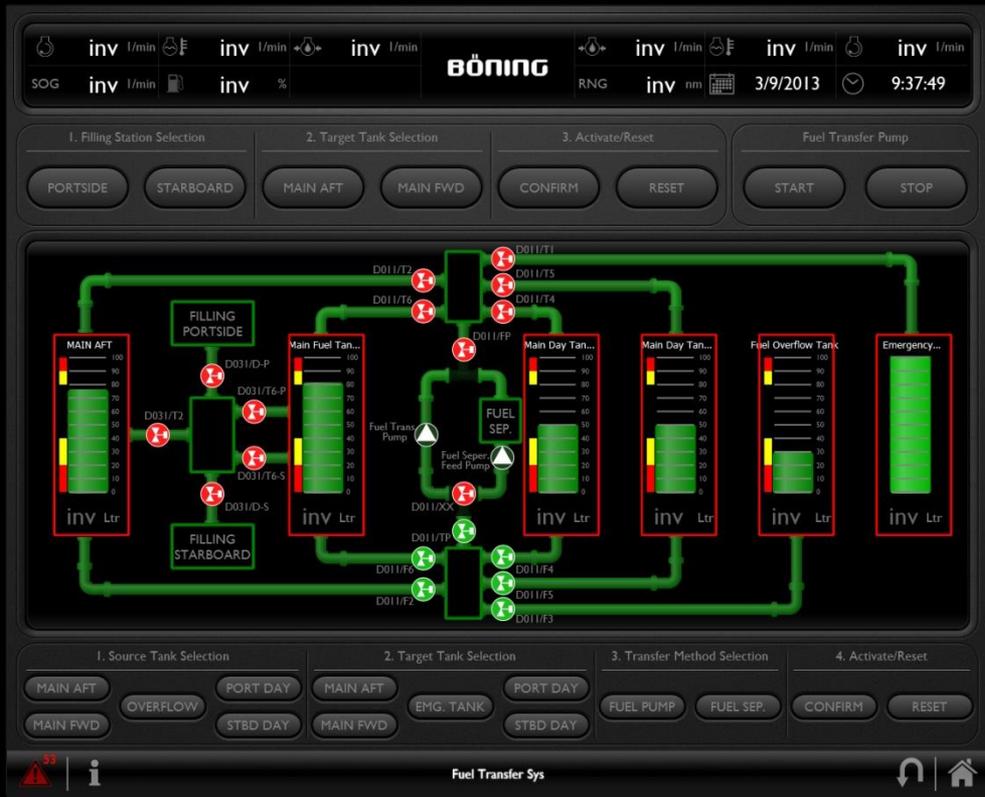
HELP

SOURCE ON-DUT



Visualization Screenshots

Portfolio with standard and customized pages



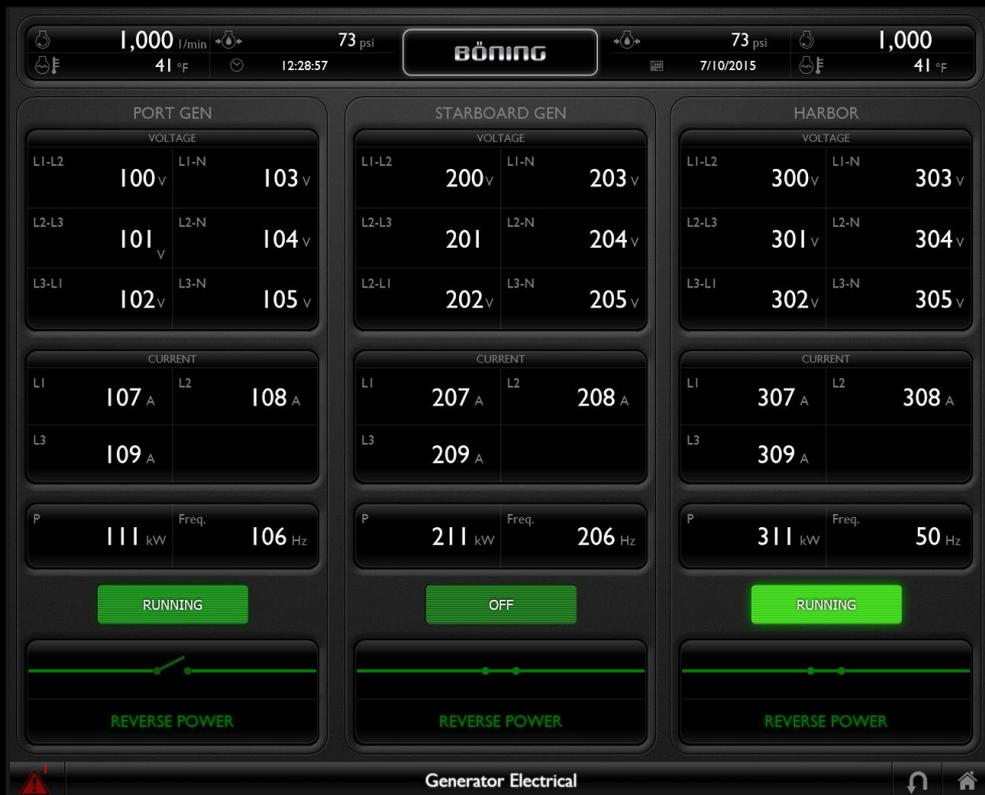
Visualization Screenshots

Portfolio with standard and customized pages



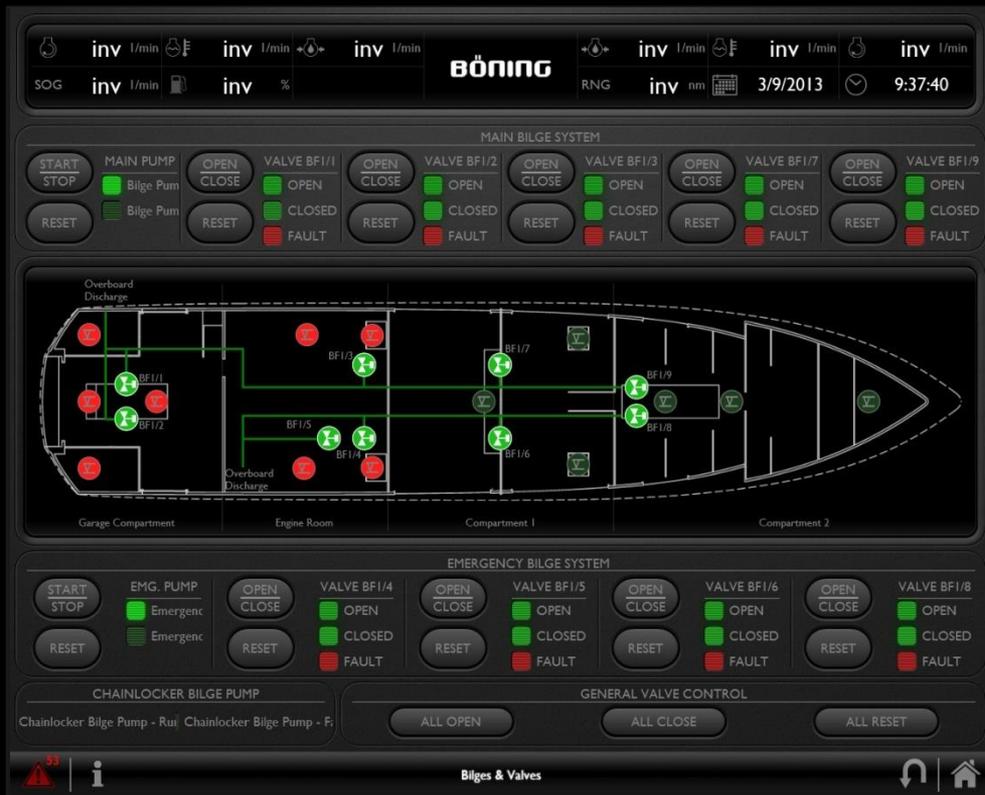
Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

Portfolio with standard and customized pages



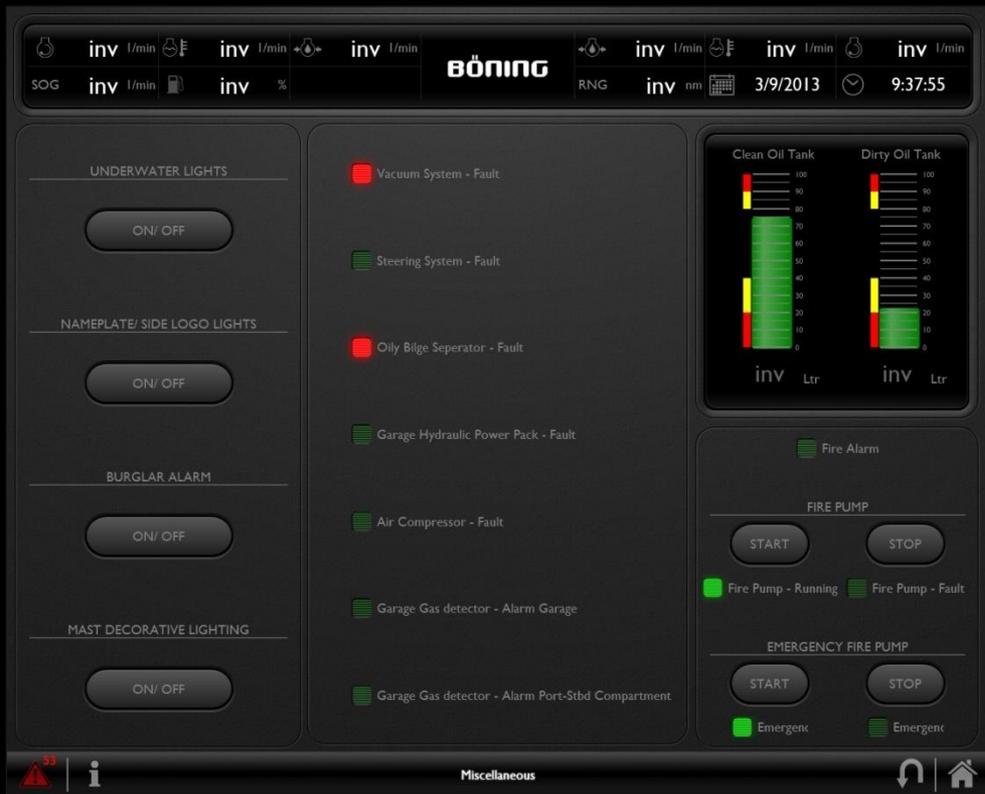
Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

Portfolio with standard and customized pages



Visualization Screenshots

**Portfolio with
standard and
customized pages**

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 SOG inv 1/min inv % RNG inv nm 3/9/2013 9:37:57

MAIN DECK

Garage Deck Door - Open off Maindeck Door Stbd - Open on Garage Hatch - Open
 Main Saloon Electric Door - Open on Crew Stairs Gas Tight Door - Open on Guest Area Fwd Hatch - Open on
 Maindeck Door Port - Open on Engine Room Hatch - Open off Guest Area Aft Hatch - Open on

FIRE DAMPERS

Galley Fire Damper #1 - Off on Galley Fire Damper #2 - Off on Accomodation aft port fire damper CLOSED on
 Accomodation aft stbd fire damper CLOSED on

Deck

Doors Main Deck

Visualization Screenshots

**Portfolio with
standard and
customized pages**

BÖNING

DEFAULT

🔍

👤

SOURCE ON-OFF

System Example



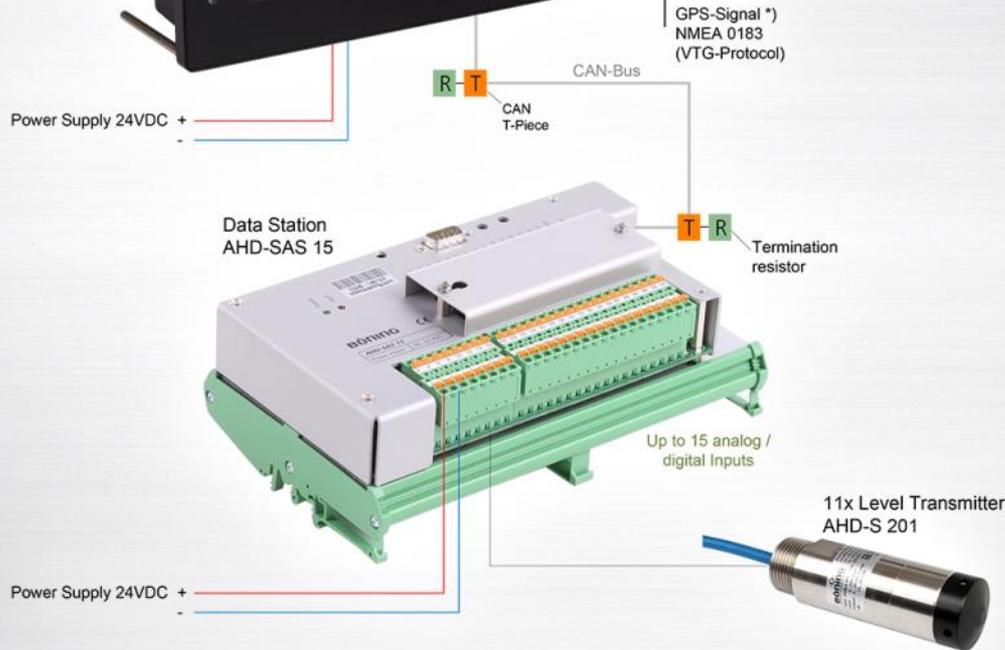
8,8" Touch Screen Display
AHD 880 G



8,8" Touchscreen Display

e.g. Tank Level Bargraphs

Analog Data Station
15 analog inputs
e.g.
Tank Level Measurement
Temperature Measurement



8,8" Touch Screen Display
AHD 880 TC

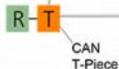


Binary Data Station
e.g.
Bilge Alarms
Pump Running Indication
Monitoring of Doors/Hatches

Power Supply 24VDC +

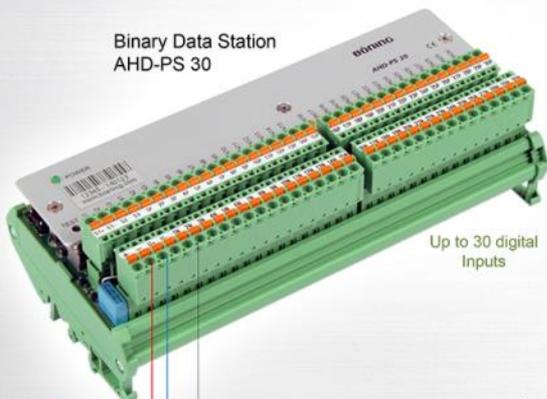
GPS-Signal *)
NMEA 0183
(VTG-Protocol)

CAN-Bus



CAN
T-Piece

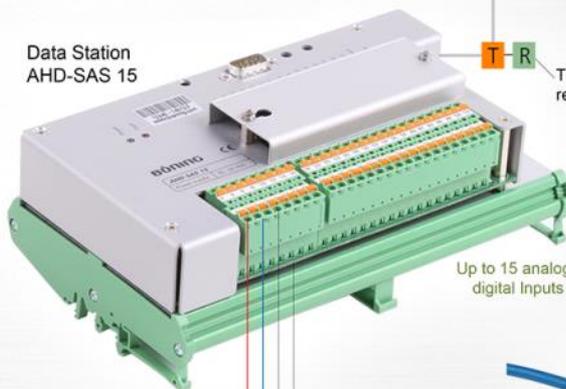
Binary Data Station
AHD-PS 30



Up to 30 digital
Inputs

Power Supply 24VDC +

Data Station
AHD-SAS 15



Up to 15 analog /
digital Inputs

Power Supply 24VDC +

Termination
resistor



serial data

11x Level Transmitter
AHD-S 201



Analog Data Station for Tank Level Bargraphs



Power Supply 24VDC +

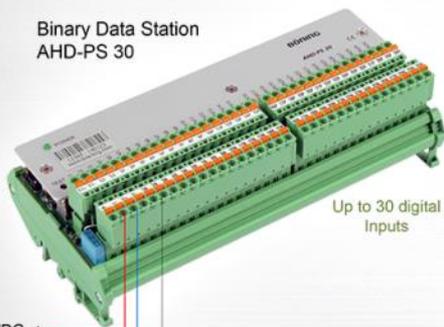
GPS-Signal *)
NMEA 0183
(VTG-Protocol)

R T
CAN
T-Piece

CAN-Bus

T R
Termination
resistor

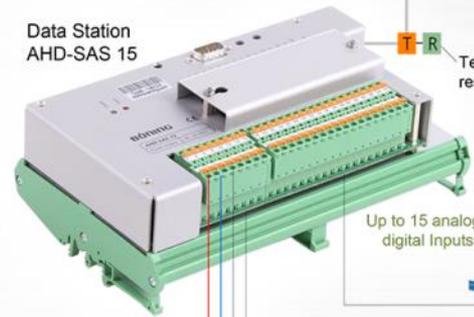
Binary Data Station
AHD-PS 30



Power Supply 24VDC +

serial data

Data Station
AHD-SAS 15



Power Supply 24VDC +

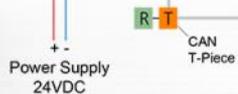
11x Level Transmitter
AHD-S 201



8,8" Touch Screen Display
AHD 880 G



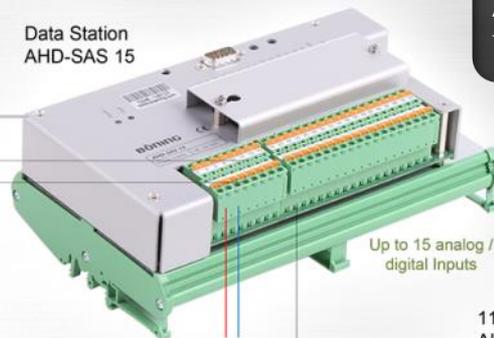
GPS-Signal *)
NMEA 0183
(VTG-Protocol)



Navigation and Signal
Lights Control
Basic Module
AHD-DPS02 G14



Data Station
AHD-SAS 15



Termination resistor

Up to 15 analog /
digital Inputs

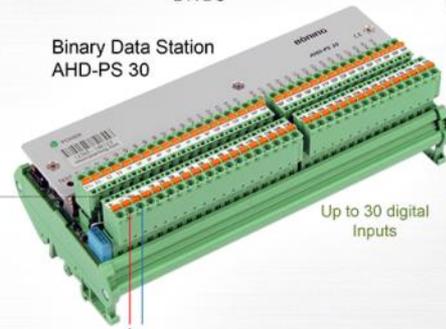
Power Supply
24VDC

11x Level Transmitter
AHD-S 201



Binary Data Station
AHD-PS 30

serial data



Up to 30 digital
Inputs

Power Supply
24VDC

Outside

Fuel Spill Warning
AHD-SW I / AHD-SW II



Horn *)

serial data

Analog Data Station for Tank Level Bargraphs

8,8" Touch Screen Display
AHD 880 G



GPS-Signal *)
NMEA 0183
(VTG-Protocol)

Power Supply
24VDC



CAN
T-Piece

Nav. Control Panel
AHD-DPS02 B14

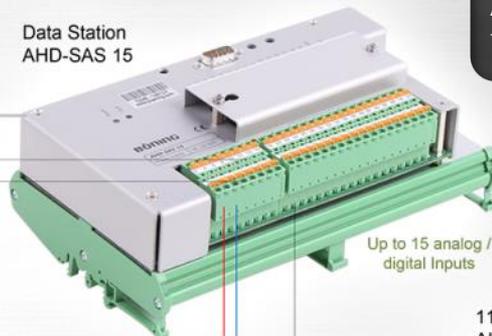


Navigation and Signal
Lights Control
Basic Module
AHD-DPS02 G14

Ribbon
cable



Data Station
AHD-SAS 15



Termination
resistor

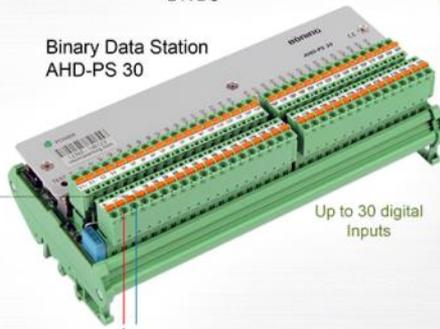
Up to 15 analog /
digital Inputs

Power Supply
24VDC

11x Level Transmitter
AHD-S 201



Binary Data Station
AHD-PS 30



serial
data

Up to 30 digital
Inputs

Power Supply
24VDC

Outside

Fuel Spill Warning
AHD-SW I / AHD-SW II



Horn *)

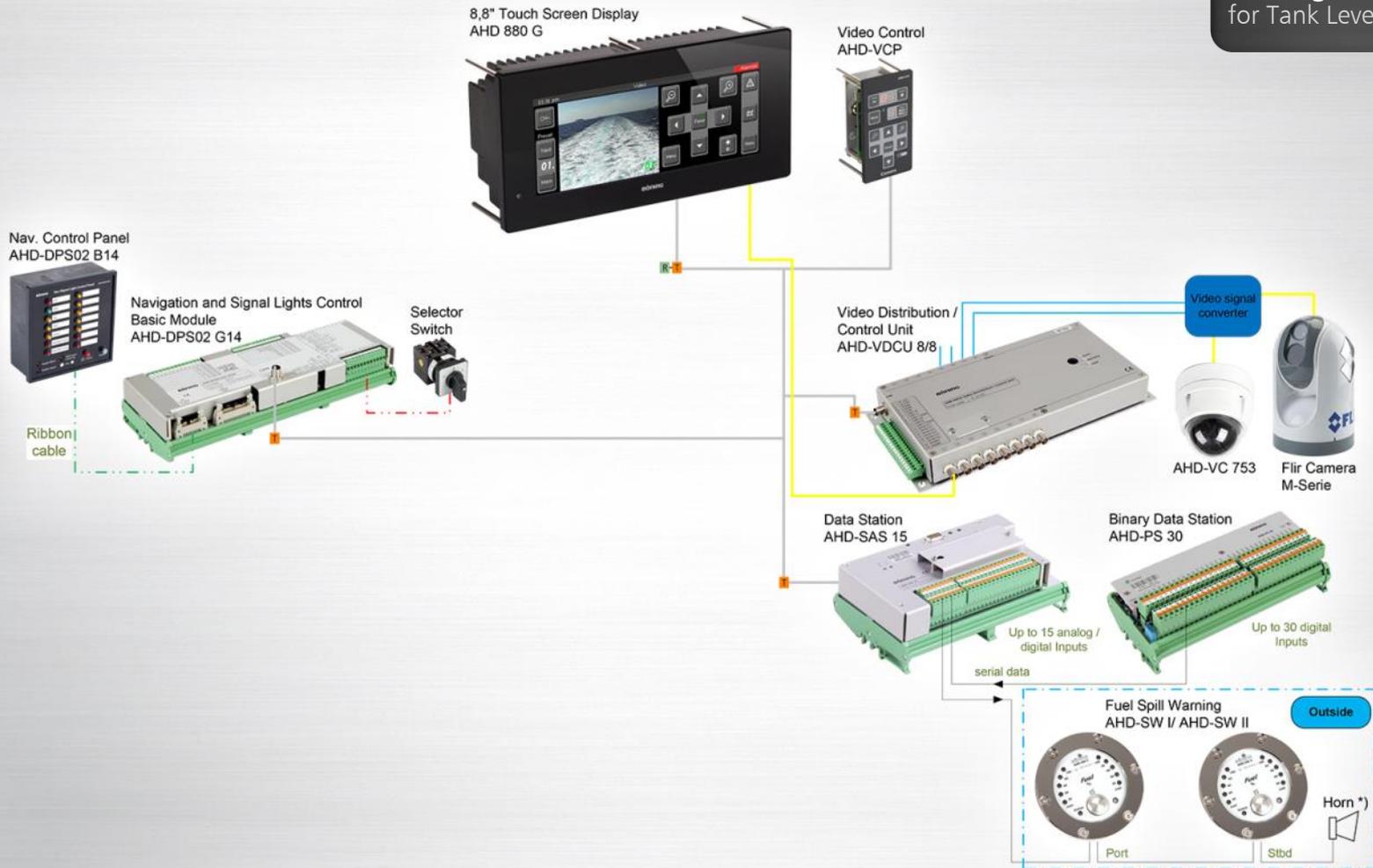
Port

Stbd

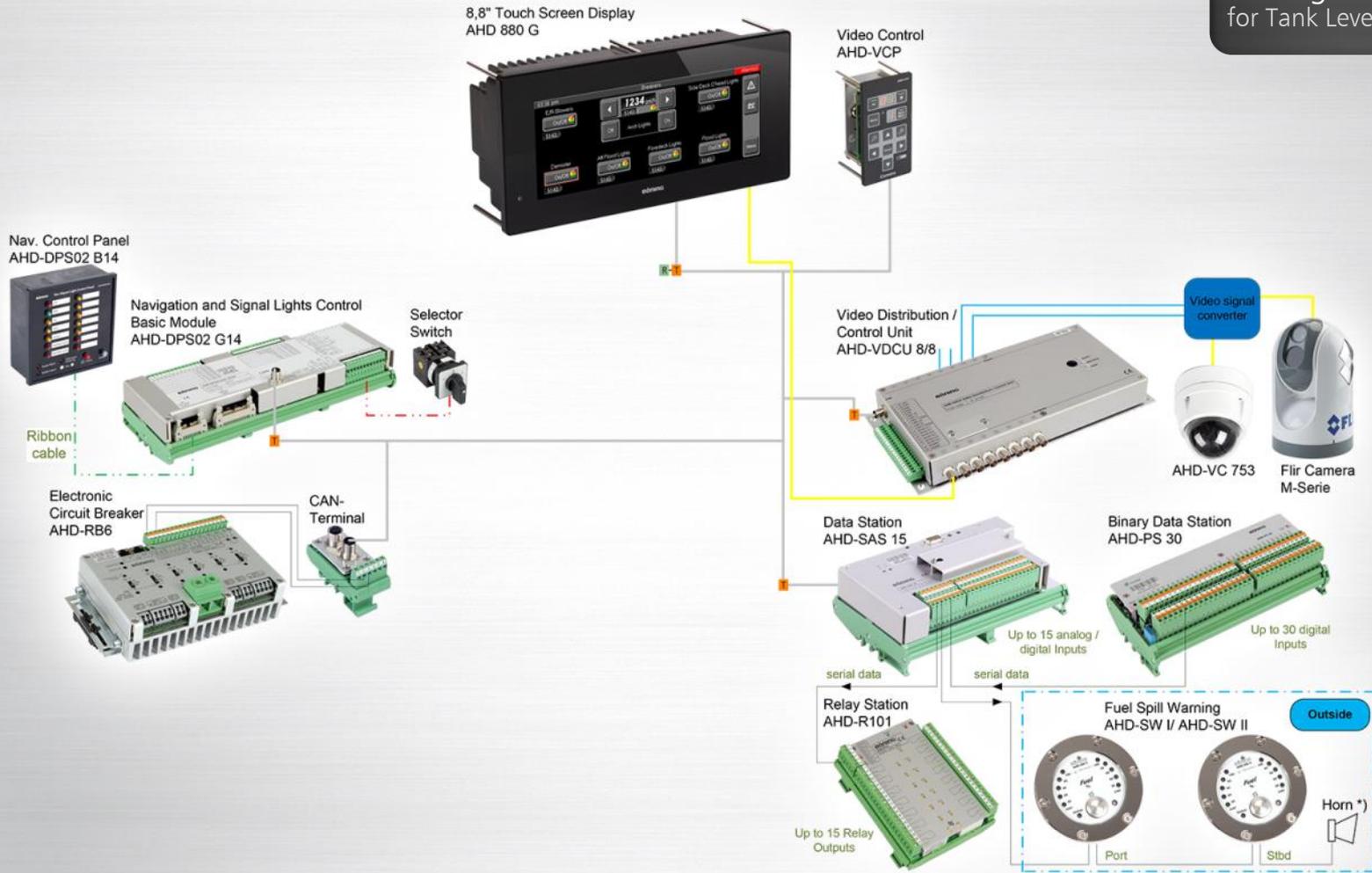
serial
data

Analog Data Station for Tank Level Bargraphs

Analog Data Station for Tank Level Bargraphs



Analog Data Station for Tank Level Bargraphs



Analog Data Station for Tank Level Bargraphs

15" Visualization Unit
AHD 1215 G



15" Visualization Unit
AHD 1215 G



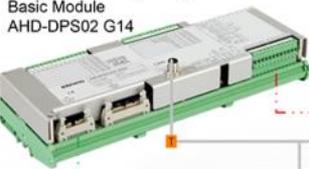
Video Control
AHD-VCP



Nav. Control Panel
AHD-DPS02 B14



Navigation and Signal Lights Control
Basic Module
AHD-DPS02 G14



Selector
Switch



Ribbon
cable

Electronic
Circuit Breaker
AHD-RB6



CAN-
Terminal



Engine Port *)



Engine Stbd *)



Video Distribution /
Control Unit
AHD-VDCU 8/8



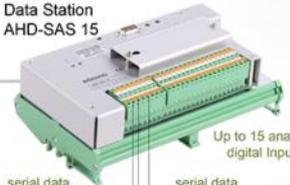
Video signal
converter



AHD-VC 753

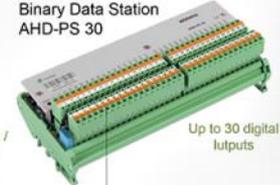
Flir Camera
M-Series

Data Station
AHD-SAS 15



Up to 15 analog /
digital inputs

Binary Data Station
AHD-PS 30



Up to 30 digital
outputs

serial data

serial data

Relay Station
AHD-R101



Up to 15 Relay
Outputs

Fuel Spill Warning
AHD-SW I / AHD-SW II



Port

Stbd

Horn *)

Outside

Analog Data Station for Tank Level Bargraphs

15" Visualization Unit
AHD 1215 G



15" Visualization Unit
AHD 1215 G



Video Control
AHD-VCP



Nav. Control Panel
AHD-DPS02 B14



Navigation and Signal Lights Control
Basic Module
AHD-DPS02 G14

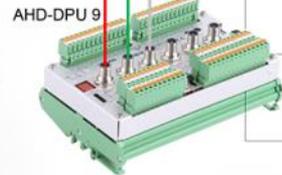


Ribbon
cable

Electronic
Circuit Breaker
AHD-RB6



CAN-
Terminal



AHD-DPU 9

PMS

Fire
Fighting

Furuno

Video Distribution /
Control Unit
AHD-VDCU 8/8



Video signal
converter



AHD-VC 753



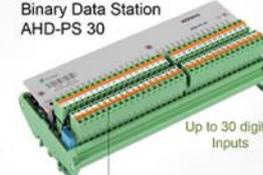
Flir Camera
M-Series

Data Station
AHD-SAS 15



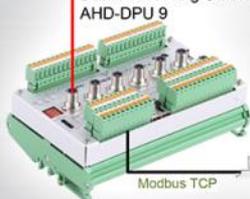
Up to 15
analog / digital
Inputs

Binary Data Station
AHD-PS 30



Up to 30 digital
Inputs

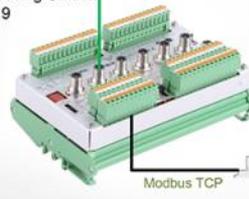
Data Processing Station
AHD-DPU 9



Modbus TCP

Engine Port *)

Data Processing Station
AHD-DPU 9



Modbus TCP

Engine Stbd *)

serial data

Relay Station
AHD-R101



Up to 15
Relay Outputs

Fuel Spill Warning
AHD-SW I / AHD-SW II



Port



Stbd

Horn *)

Outside

Analog Data Station for Tank Level Bargraphs

19" Visualization Unit
AHD 1219 G



19" Visualization Unit
AHD 1219 G



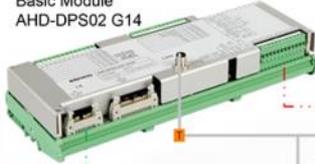
Video Control
AHD-VCP



Nav. Control Panel
AHD-DPS02 B14



Navigation and Signal Lights Control
Basic Module
AHD-DPS02 G14



Ribbon
cable

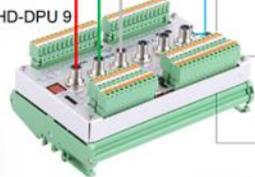
Electronic
Circuit Breaker
AHD-RB6



CAN-
Terminal



AHD-DPU 9



Logging - Function
AHD-WNL Server



WLAN Access

PMS

Fire
Fighting

Furuno

Video Distribution /
Control Unit
AHD-VDCU 8/8



Video signal
converter



AHD-VC 753



Fliir Camera
M-Series

Data Station
AHD-SAS 15



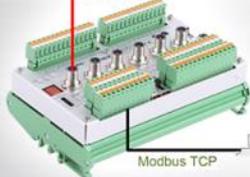
Binary Data Station
AHD-PS 30



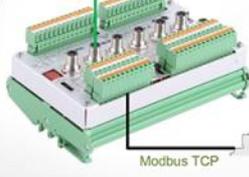
Up to 15 analog /
digital Inputs

Up to 30
digital Inputs

Data Processing Station
AHD-DPU 9



Data Processing Station
AHD-DPU 9



Engine Port *



Engine Stbd *



Modbus TCP

Modbus TCP

serial data

serial data

Relay Station
AHD-R101



Up to 15
Relay Outputs

Fuel Spill Warning
AHD-SW I / AHD-SW II



Port

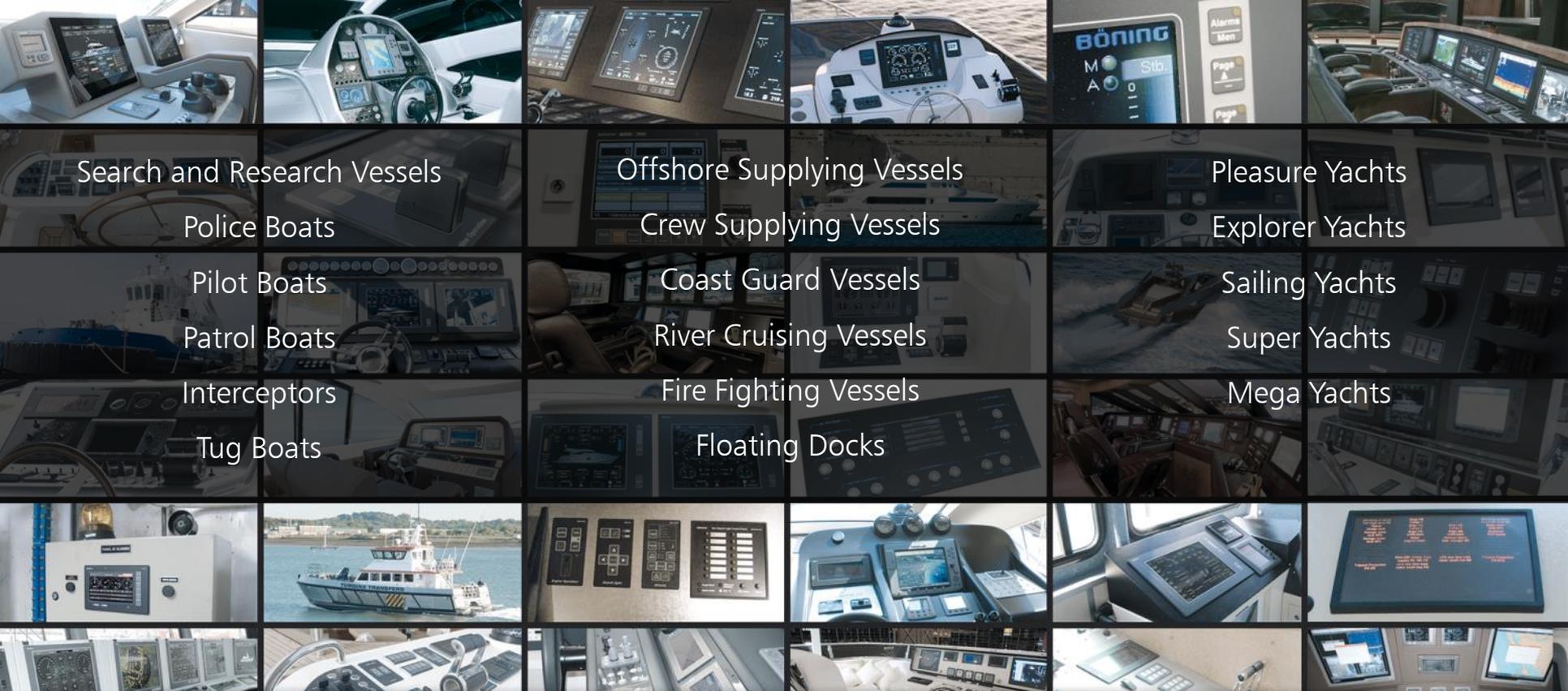
Stbd

Outside

Horn *

References





Search and Research Vessels

Police Boats

Pilot Boats

Patrol Boats

Interceptors

Tug Boats

Offshore Supplying Vessels

Crew Supplying Vessels

Coast Guard Vessels

River Cruising Vessels

Fire Fighting Vessels

Floating Docks

Pleasure Yachts

Explorer Yachts

Sailing Yachts

Super Yachts

Mega Yachts

References

Ships with Böning Automation Systems





Realized Bridge Concept

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Utility Boat | UT 4000

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Diving Support Vessel | 42m

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Supply Vessel

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Tug Boats



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Wind Cat | 24m

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Fast Ferry | 40m

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Fast Crew Supplier | 30/50 m



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River Cruiser

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Patrol Boat

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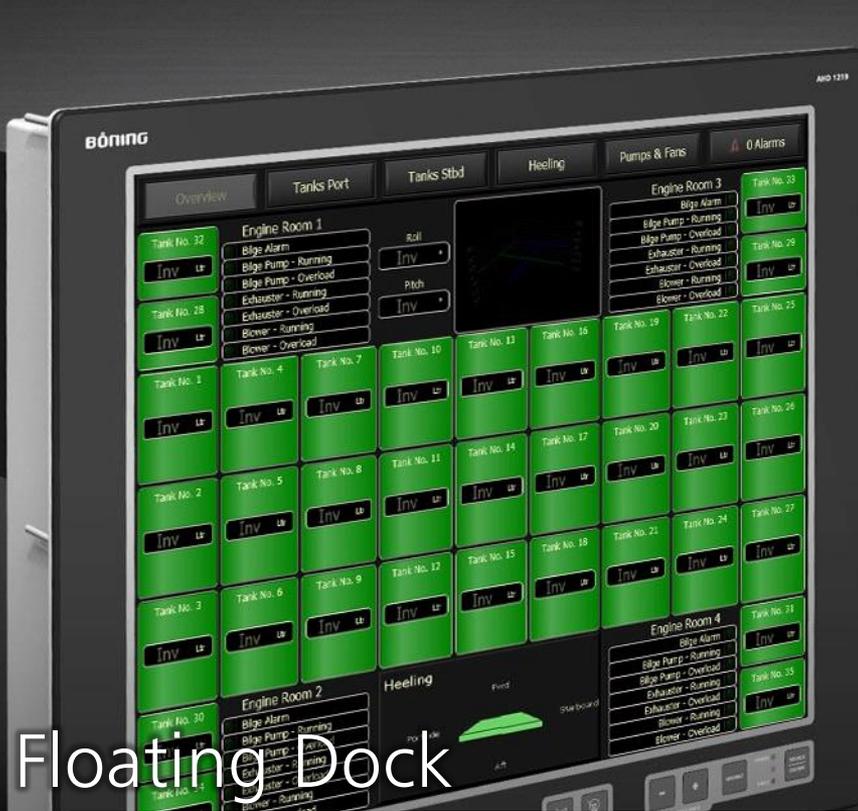
Crew Transportation Vessel

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Floating Dock



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