


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



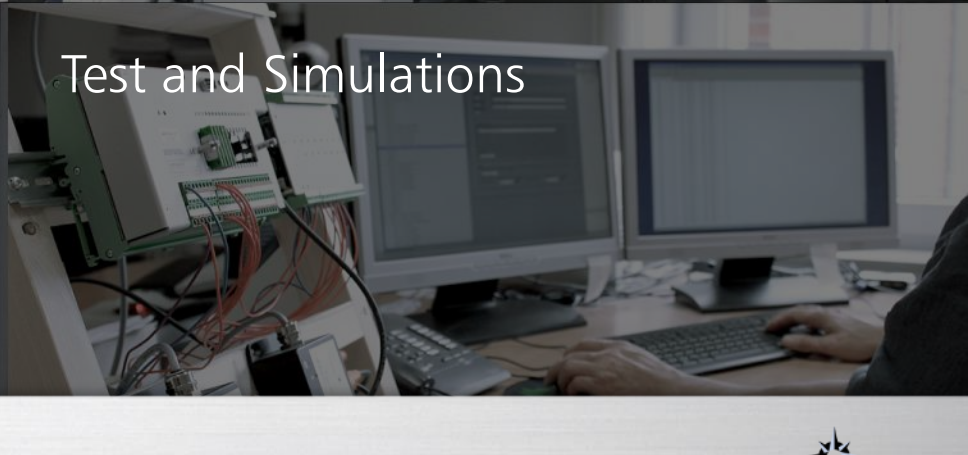
EMC Laboratory



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

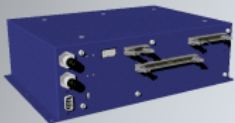


Hardware

Electronics



Mechanics

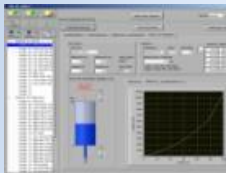


Firmware

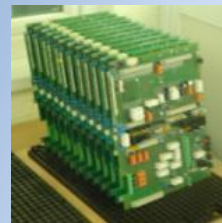
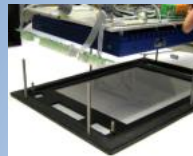


Software

ConfigTool



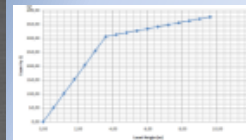
Production



Engineering



Item	Measurement	Result
1	Speed (km/h)	12.3
2	Fuel (kg/h)	15.6
3	Power (kW)	18.9
4	Temperature (°C)	25.4
5	Pressure (bar)	1.2
6	Vibration (mm/s)	0.5
7	Humidity (%)	65
8	Light (lux)	100
9	Sound (dB)	75
10	Position (m)	10.0
11	Altitude (m)	5.0
12	Depth (m)	10.0
13	Current (A)	1.5
14	Voltage (V)	12.0
15	Resistance (Ω)	100
16	Capacitance (F)	100
17	Inductance (H)	100
18	Frequency (Hz)	100
19	Period (s)	100
20	Phase (°)	100
21	Amplitude (V)	100
22	Offset (V)	100
23	Gain (V/V)	100
24	Bandwidth (Hz)	100
25	Resolution (bits)	100
26	Accuracy (%)	100
27	Linearity (%)	100
28	Stability (%)	100
29	Repeatability (%)	100
30	Drift (ppm/°C)	100
31	Temperature Coefficient (%)	100
32	Power Coefficient (%)	100
33	Frequency Coefficient (%)	100
34	Pressure Coefficient (%)	100
35	Humidity Coefficient (%)	100
36	Light Coefficient (%)	100
37	Sound Coefficient (%)	100
38	Position Coefficient (%)	100
39	Altitude Coefficient (%)	100
40	Depth Coefficient (%)	100
41	Current Coefficient (%)	100
42	Voltage Coefficient (%)	100
43	Resistance Coefficient (%)	100
44	Capacitance Coefficient (%)	100
45	Inductance Coefficient (%)	100
46	Frequency Coefficient (%)	100
47	Period Coefficient (%)	100
48	Phase Coefficient (%)	100
49	Amplitude Coefficient (%)	100
50	Offset Coefficient (%)	100
51	Gain Coefficient (%)	100
52	Bandwidth Coefficient (%)	100
53	Resolution Coefficient (%)	100
54	Accuracy Coefficient (%)	100
55	Linearity Coefficient (%)	100
56	Stability Coefficient (%)	100
57	Repeatability Coefficient (%)	100
58	Drift Coefficient (%)	100
59	Temperature Coefficient (%)	100
60	Power Coefficient (%)	100
61	Frequency Coefficient (%)	100
62	Pressure Coefficient (%)	100
63	Humidity Coefficient (%)	100
64	Light Coefficient (%)	100
65	Sound Coefficient (%)	100
66	Position Coefficient (%)	100
67	Altitude Coefficient (%)	100
68	Depth Coefficient (%)	100
69	Current Coefficient (%)	100
70	Voltage Coefficient (%)	100
71	Resistance Coefficient (%)	100
72	Capacitance Coefficient (%)	100
73	Inductance Coefficient (%)	100
74	Frequency Coefficient (%)	100
75	Period Coefficient (%)	100
76	Phase Coefficient (%)	100
77	Amplitude Coefficient (%)	100
78	Offset Coefficient (%)	100
79	Gain Coefficient (%)	100
80	Bandwidth Coefficient (%)	100
81	Resolution Coefficient (%)	100
82	Accuracy Coefficient (%)	100
83	Linearity Coefficient (%)	100
84	Stability Coefficient (%)	100
85	Repeatability Coefficient (%)	100
86	Drift Coefficient (%)	100
87	Temperature Coefficient (%)	100
88	Power Coefficient (%)	100
89	Frequency Coefficient (%)	100
90	Pressure Coefficient (%)	100
91	Humidity Coefficient (%)	100
92	Light Coefficient (%)	100
93	Sound Coefficient (%)	100
94	Position Coefficient (%)	100
95	Altitude Coefficient (%)	100
96	Depth Coefficient (%)	100
97	Current Coefficient (%)	100
98	Voltage Coefficient (%)	100
99	Resistance Coefficient (%)	100
100	Capacitance Coefficient (%)	100



Certification



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

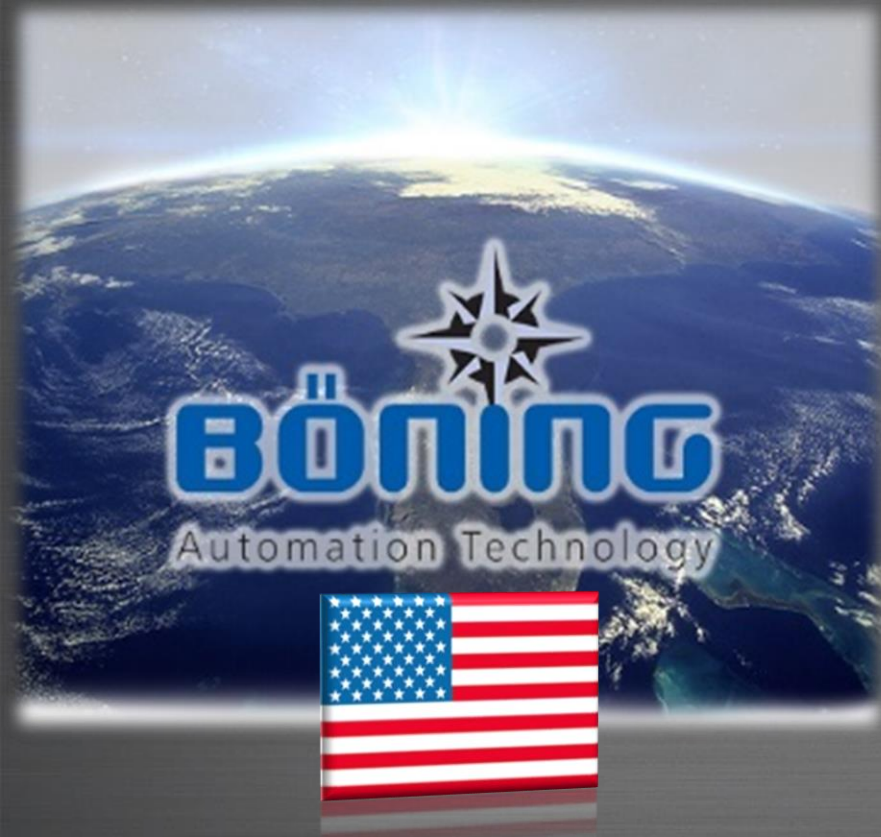
Subsidiaries and Representatives

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





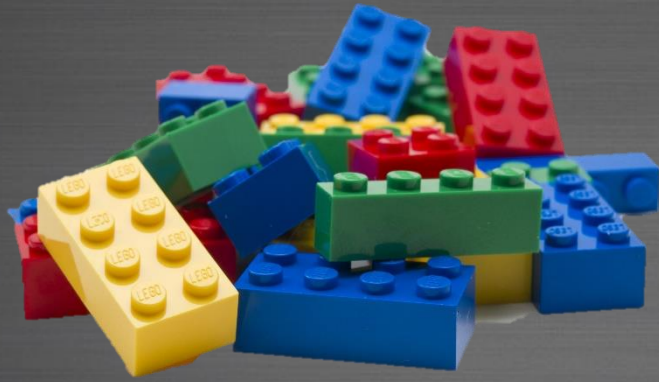
GL Systems Certification

Certified Systems
Böning Automation Technology



Böning Advantages





The system can be build 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



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)

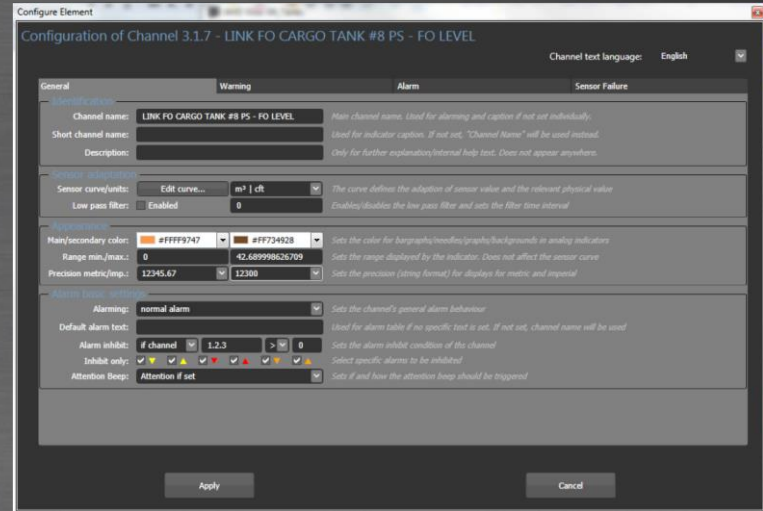


Technical Support Everywhere

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.

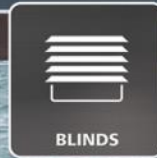


After-sales support

Via Remote Access

Ship Automation Systems





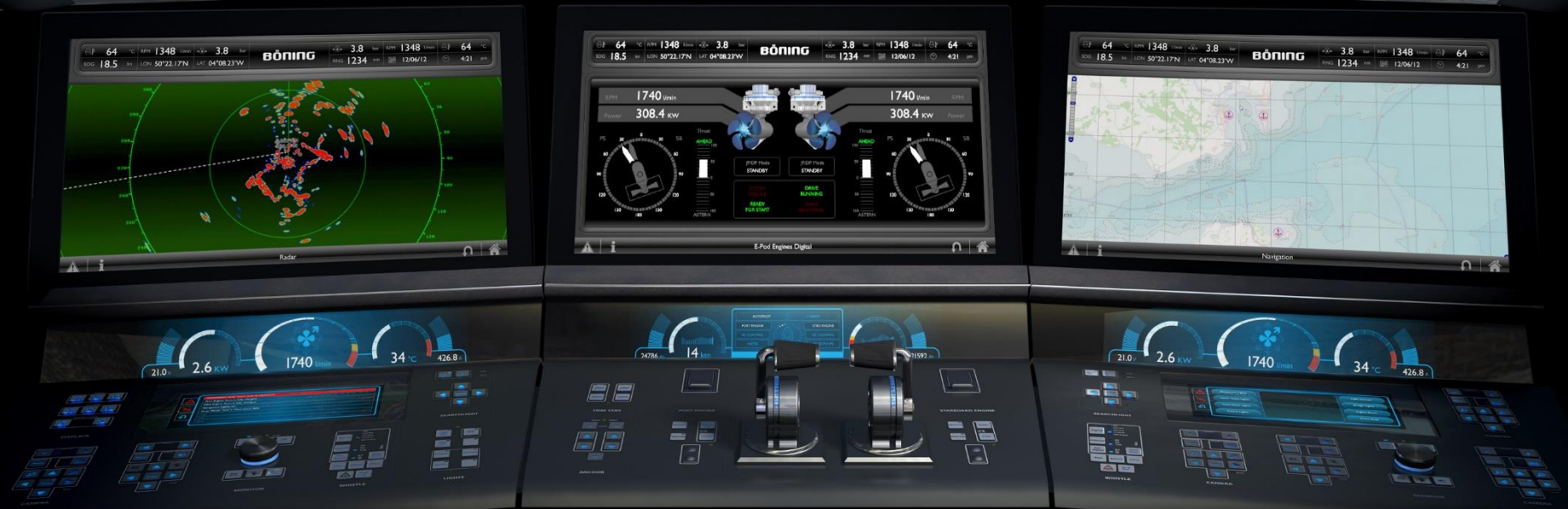
System Integration

Böning Automation Technology



Integrated Bridge Concepts

BIBS – Böning Integrated Bridge Systems



Integrated Bridge Concepts

BIBS – Böning Integrated Bridge Systems

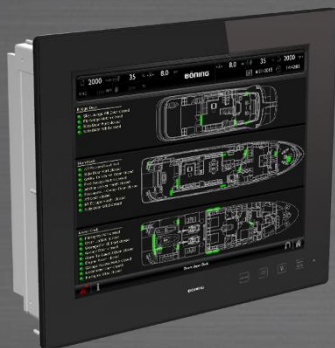
Our Panel PC Systems – Ordered by Size.

10"

15"

19"

24"



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



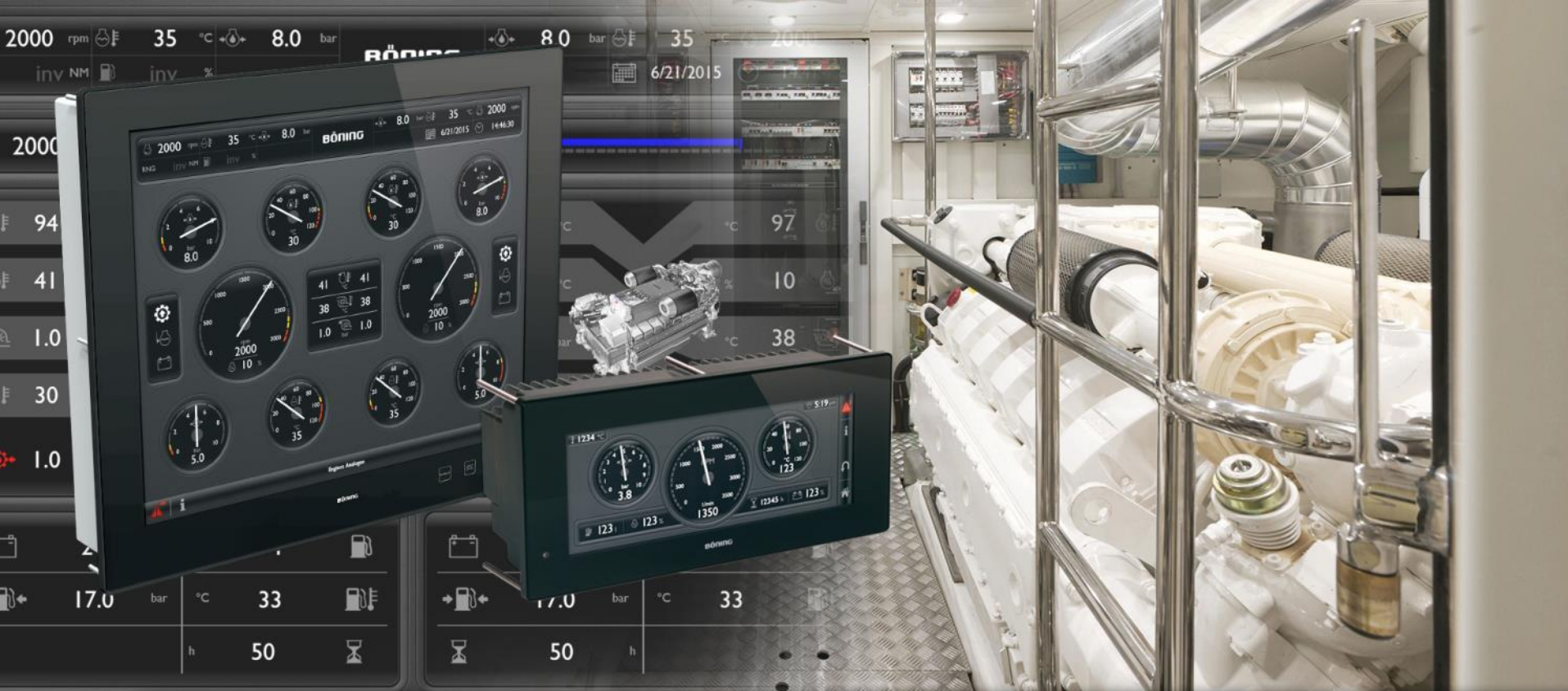
Operation Panels

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



Operation Panels

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



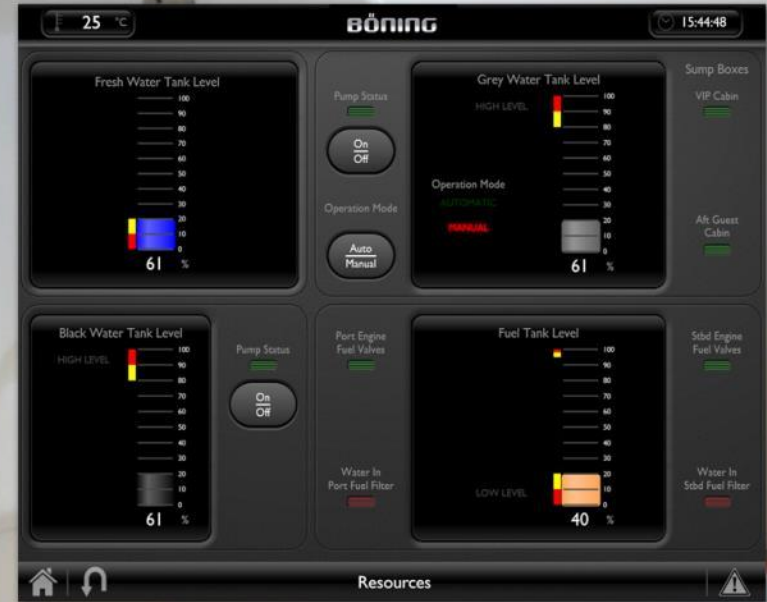
Engine Monitoring Systems

Presenting detailed engine data clearly to the operator



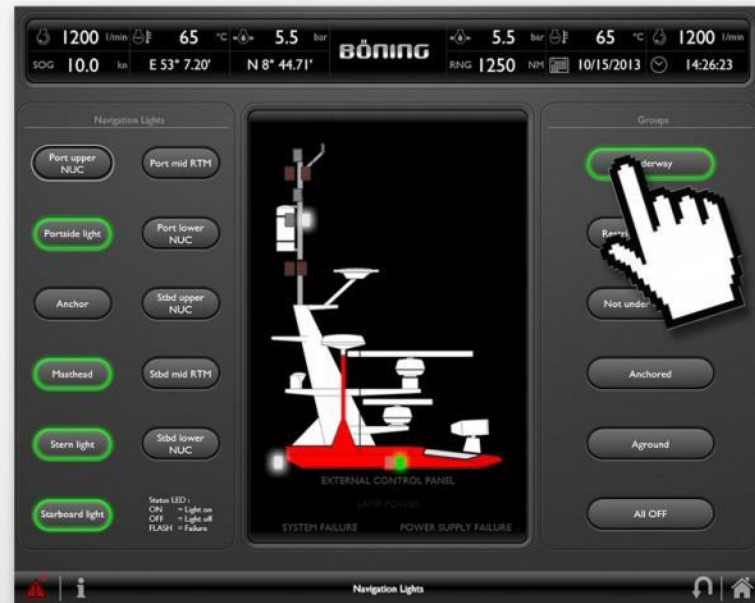
Ship Data on Tablet, Notebook or Desktop PC

Remote access and maintenance available everywhere



Overview of the Ship's Resource Levels

Fuel and water tanks monitoring with pumps control



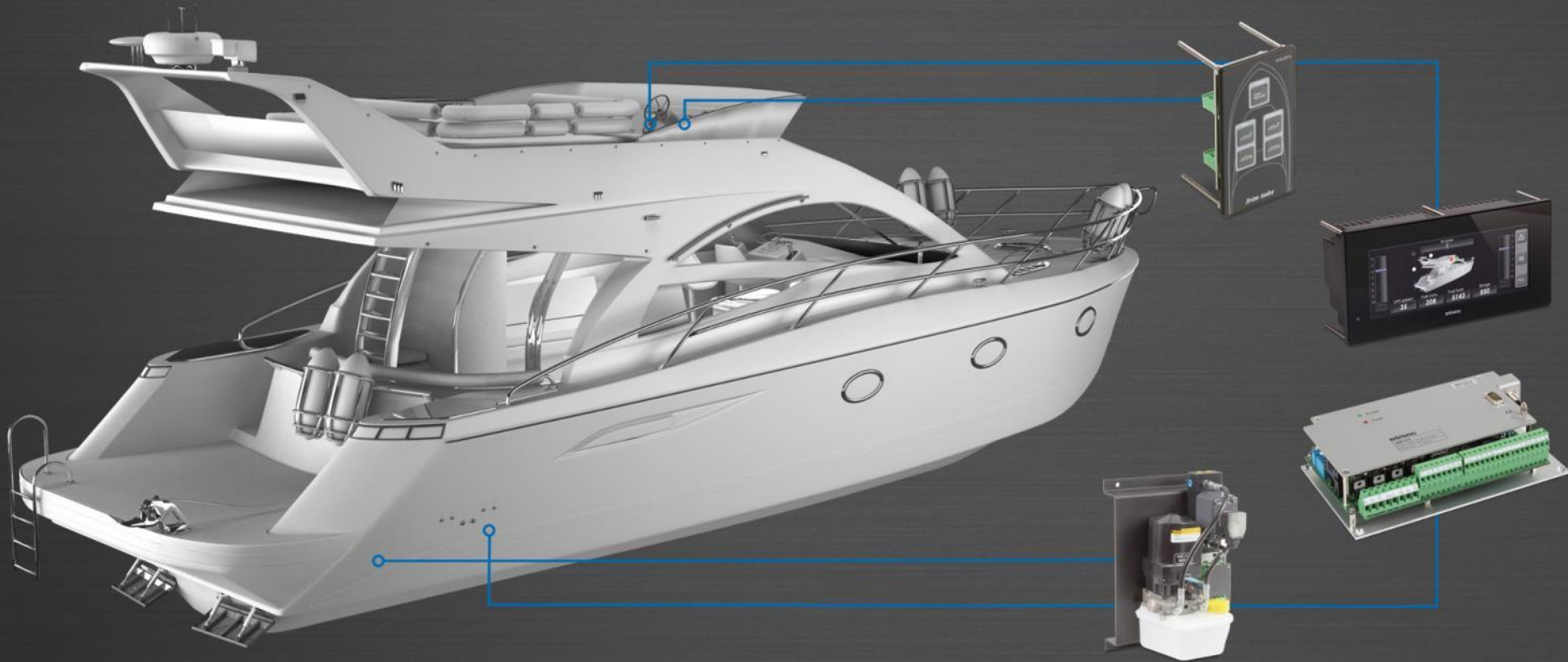
Navigation Lanterns Control

Modular systems for all customary voltages on board



Engine Start/Stop Systems

Transponder technology is protecting against unauthorized operation



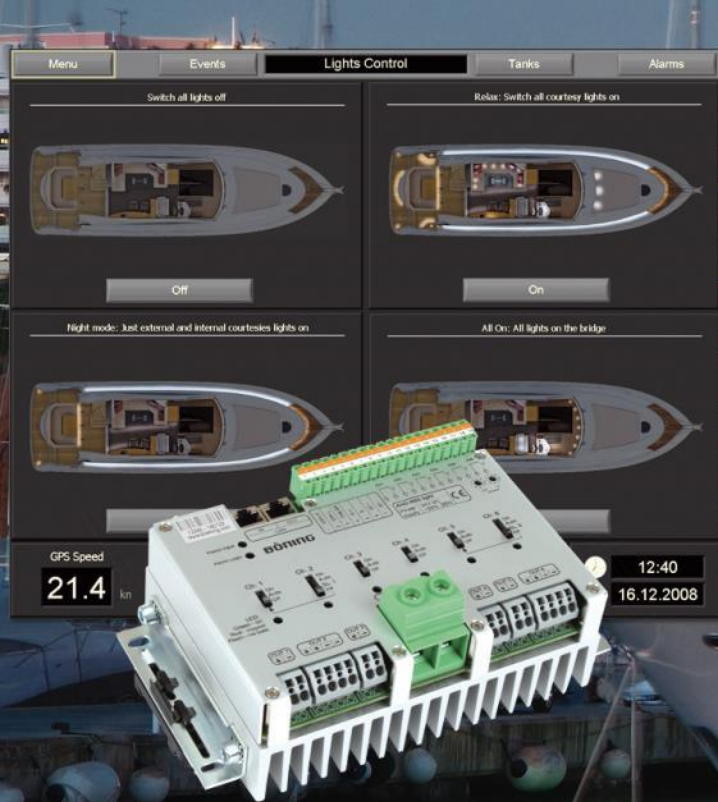
Trim Tabs Control System

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



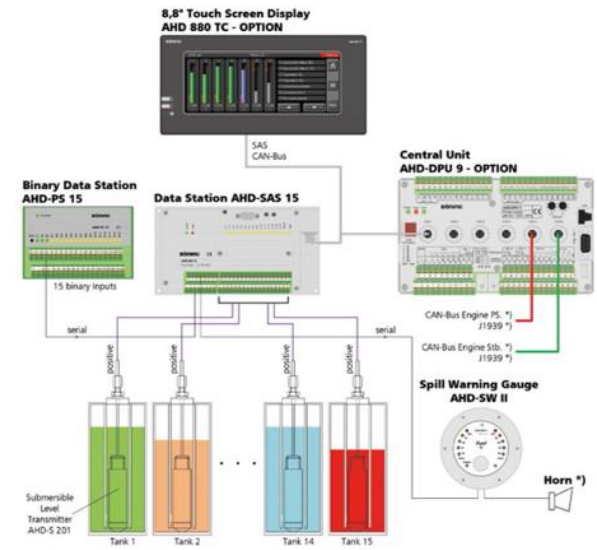
Watch Alarm Panels (BNWAS)

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

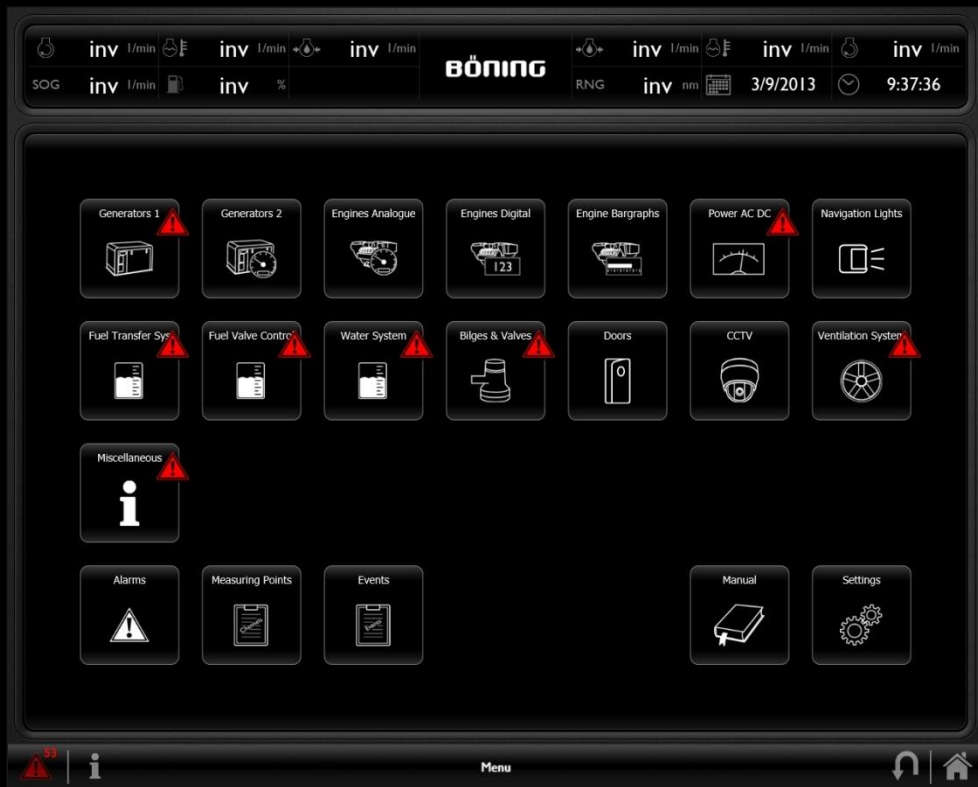
Visualization Screenshots





Visualization examples

Portfolio with standard and customized pages



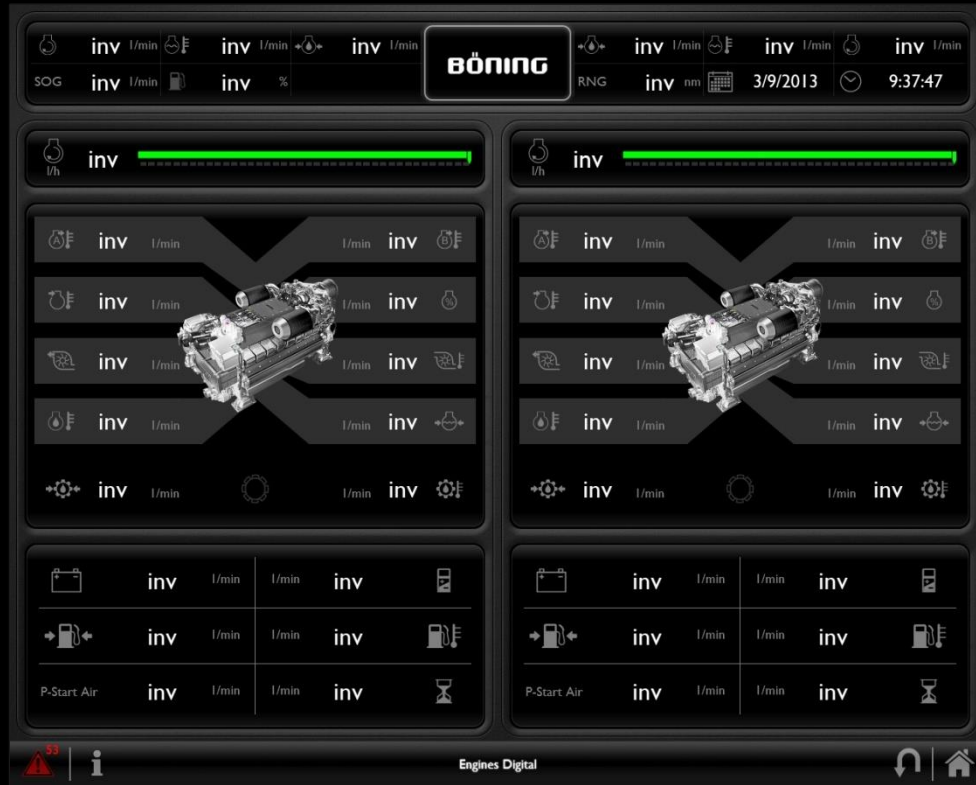
Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

Portfolio with standard and customized pages



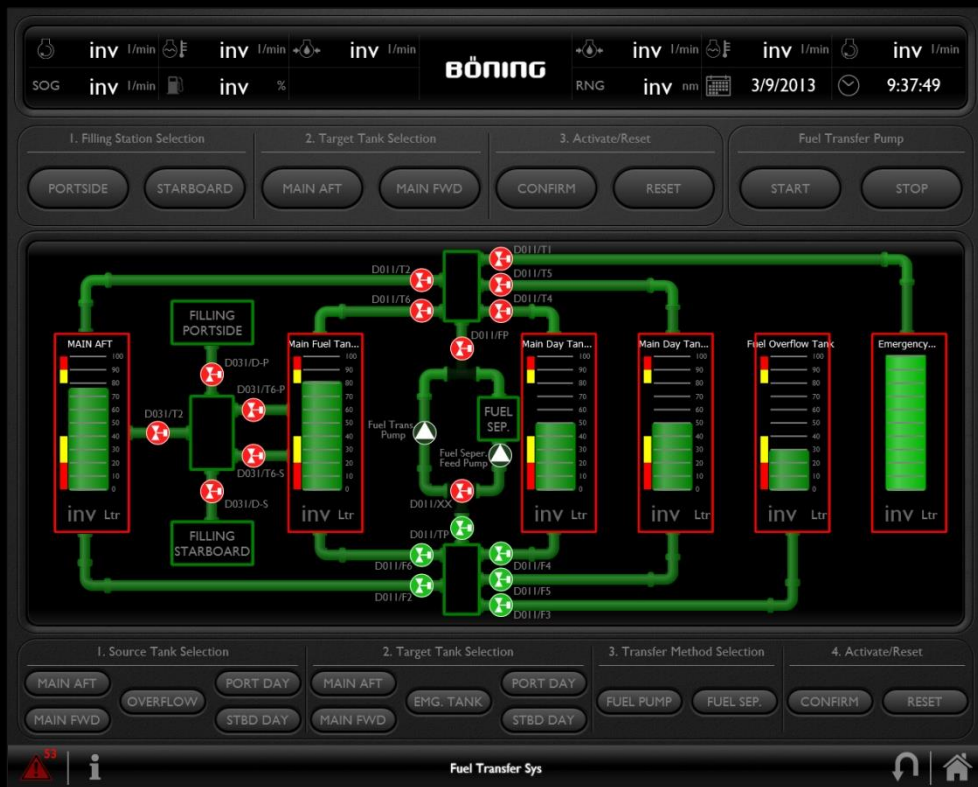
Visualization Screenshots

**Portfolio with
standard and
customized pages**



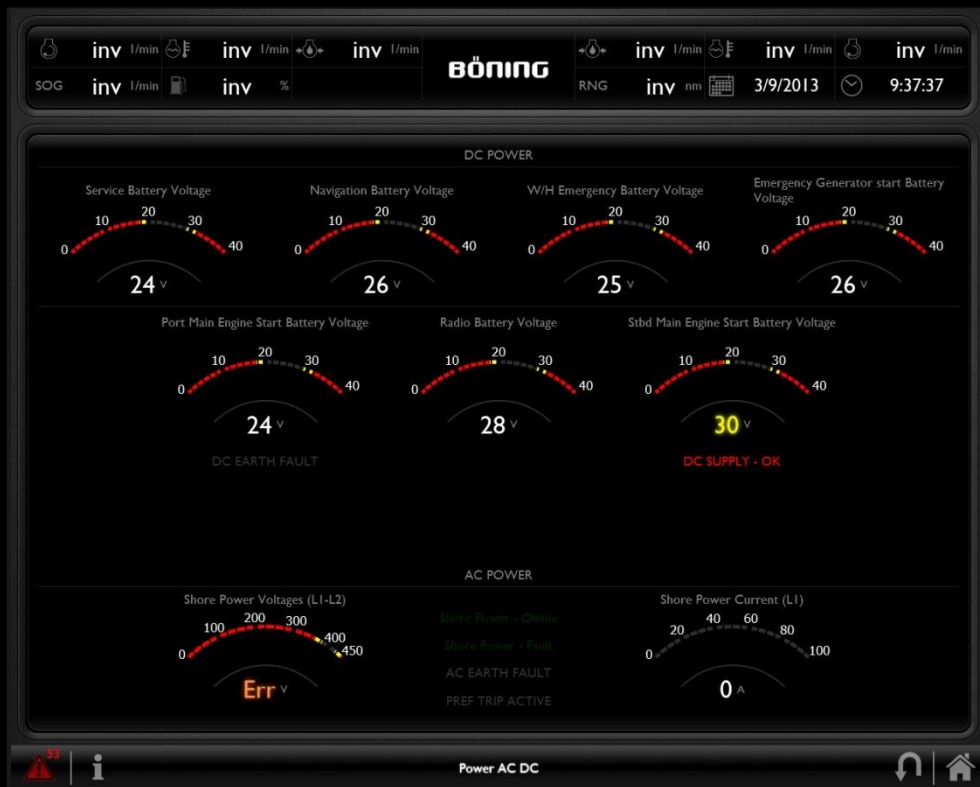
Visualization Screenshots

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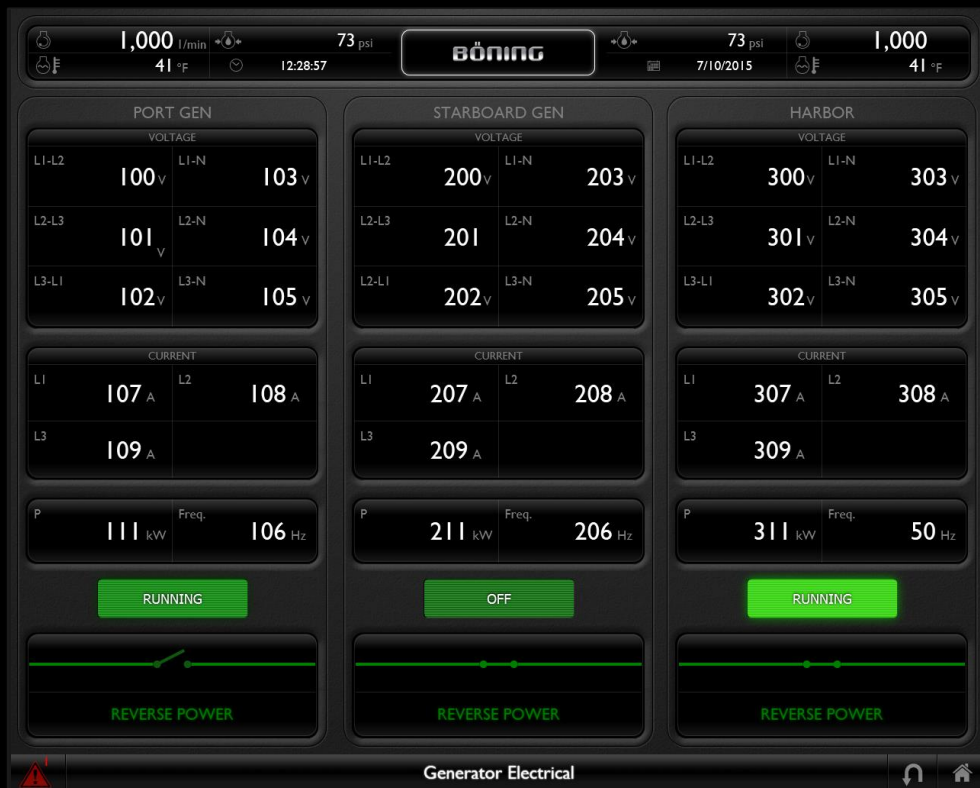
Visualization Screenshots

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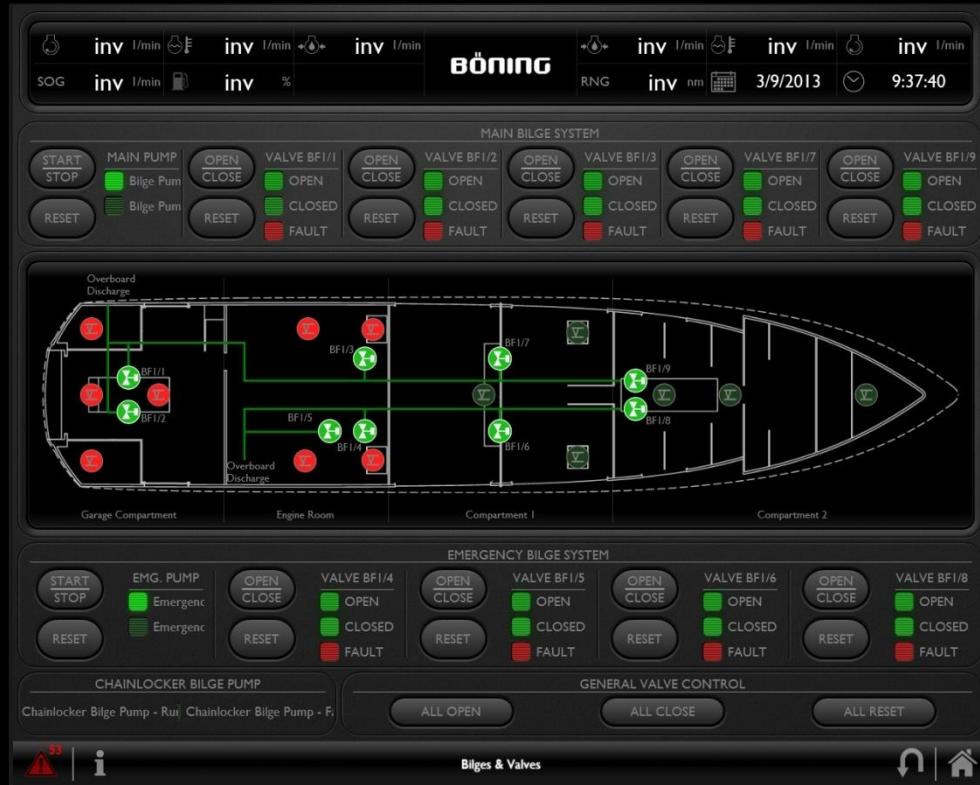
Visualization Screenshots

**Portfolio with
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customized pages**



Visualization Screenshots

Portfolio with standard and customized pages



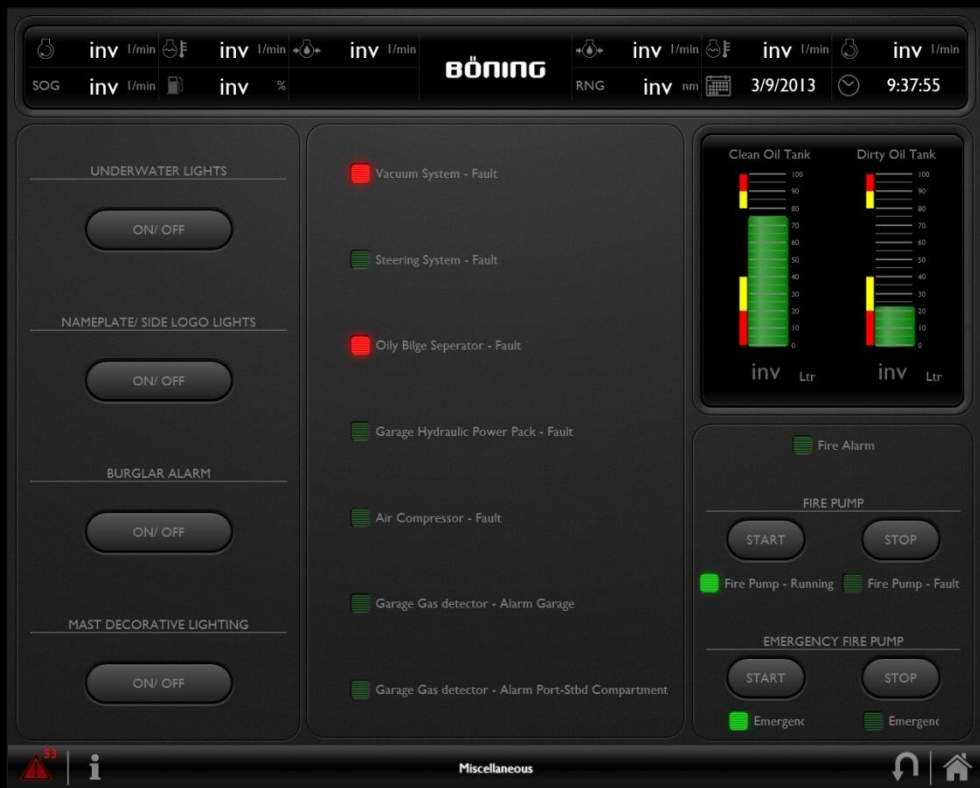
Visualization Screenshots

Portfolio with standard and customized pages



Visualization Screenshots

**Portfolio with
standard and
customized pages**



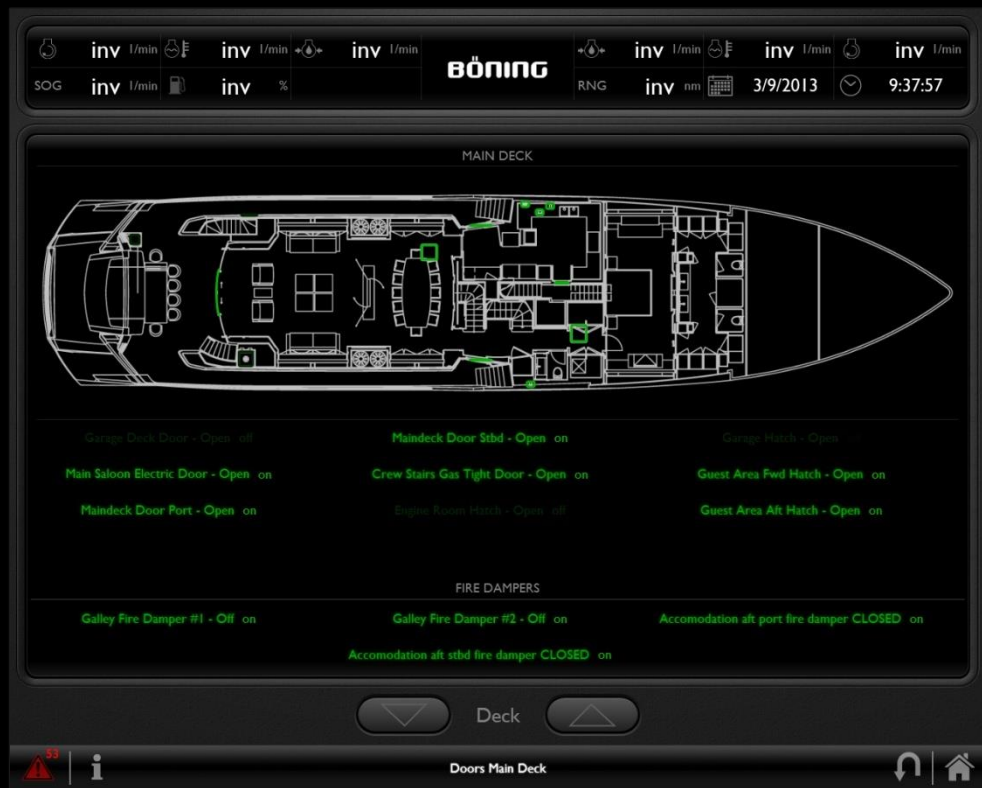
Visualization Screenshots

Portfolio with standard and customized pages



Visualization Screenshots

**Portfolio with
standard and
customized pages**



Visualization Screenshots

**Portfolio with
standard and
customized pages**

System Example



8,8" Touch Screen Display
AHD 880 G



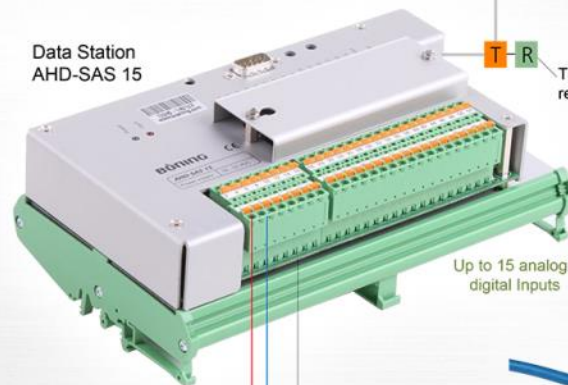
Power Supply 24VDC +

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

CAN-Bus

R T
CAN
T-Piece

Data Station
AHD-SAS 15



T R
Termination
resistor

Up to 15 analog /
digital inputs

Power Supply 24VDC +

11x Level Transmitter
AHD-S 201



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



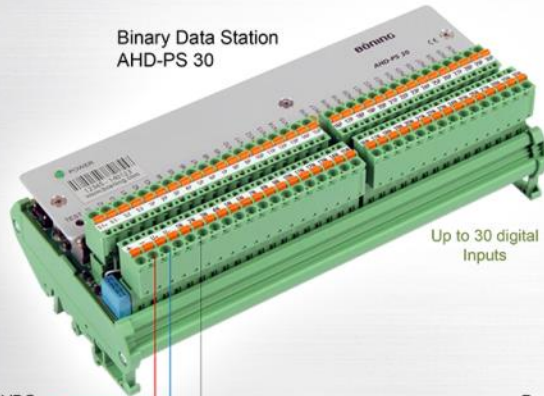
GPS-Signal *)
NMEA 0183
(VTG-Protocol)

CAN-Bus

R T
CAN
T-Piece

Power Supply 24VDC +

Binary Data Station
AHD-PS 30

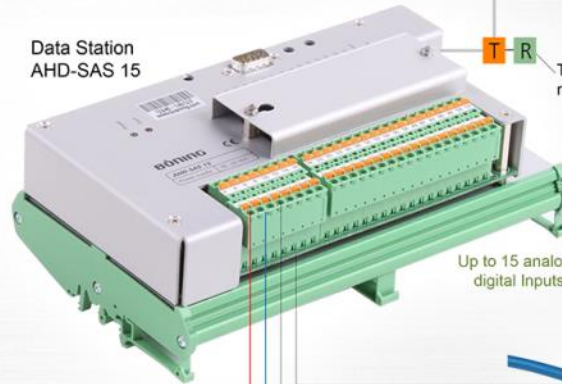


Up to 30 digital
Inputs

Power Supply 24VDC +

serial data

Data Station
AHD-SAS 15



Up to 15 analog /
digital Inputs

Power Supply 24VDC +

T R
Termination
resistor

11x Level Transmitter
AHD-S 201



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

Analog Data Station for Tank Level Bargraphs

8,8" Touch Screen Display
AHD 880 G



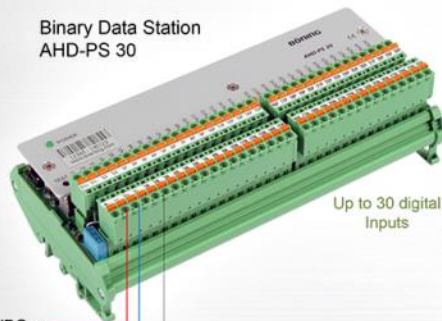
GPS-Signal *)
NMEA 0183
(VTG-Protocol)

CAN-Bus

R-T
CAN
T-Piece

Power Supply 24VDC +

Binary Data Station
AHD-PS 30

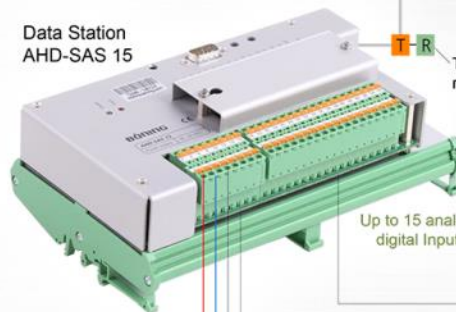


Up to 30 digital
Inputs

Power Supply 24VDC +

serial data

Data Station
AHD-SAS 15



Up to 15 analog /
digital Inputs

Power Supply 24VDC +

T-R
Termination
resistor

11x Level Transmitter
AHD-S 201



Outside

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



serial data

Port

Stbd

8,8" Touch Screen Display
AHD 880 G



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

Power Supply
24VDC

CAN
T-Piece

Navigation and Signal
Lights Control
Basic Module
AHD-DPS02 G14



Data Station
AHD-SAS 15



Termination
resistor

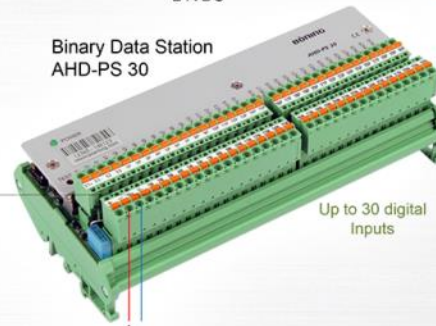
Up to 15 analog /
digital Inputs

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

serial
data

Outside

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



Port

Stbd

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

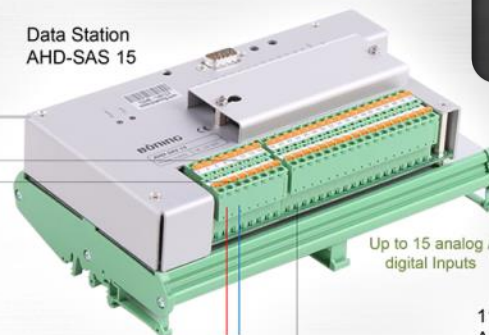


Navigation and Signal
Lights Control
Basic Module
AHD-DPS02 G14



Ribbon
cable

Data Station
AHD-SAS 15



Termination
resistor

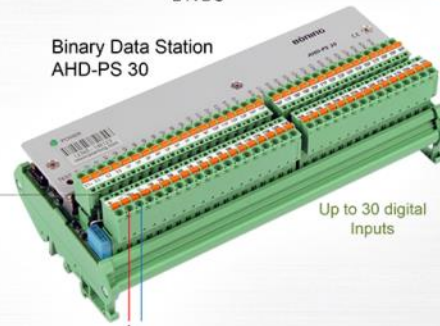
Up to 15 analog /
digital Inputs

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

serial
data

Outside

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



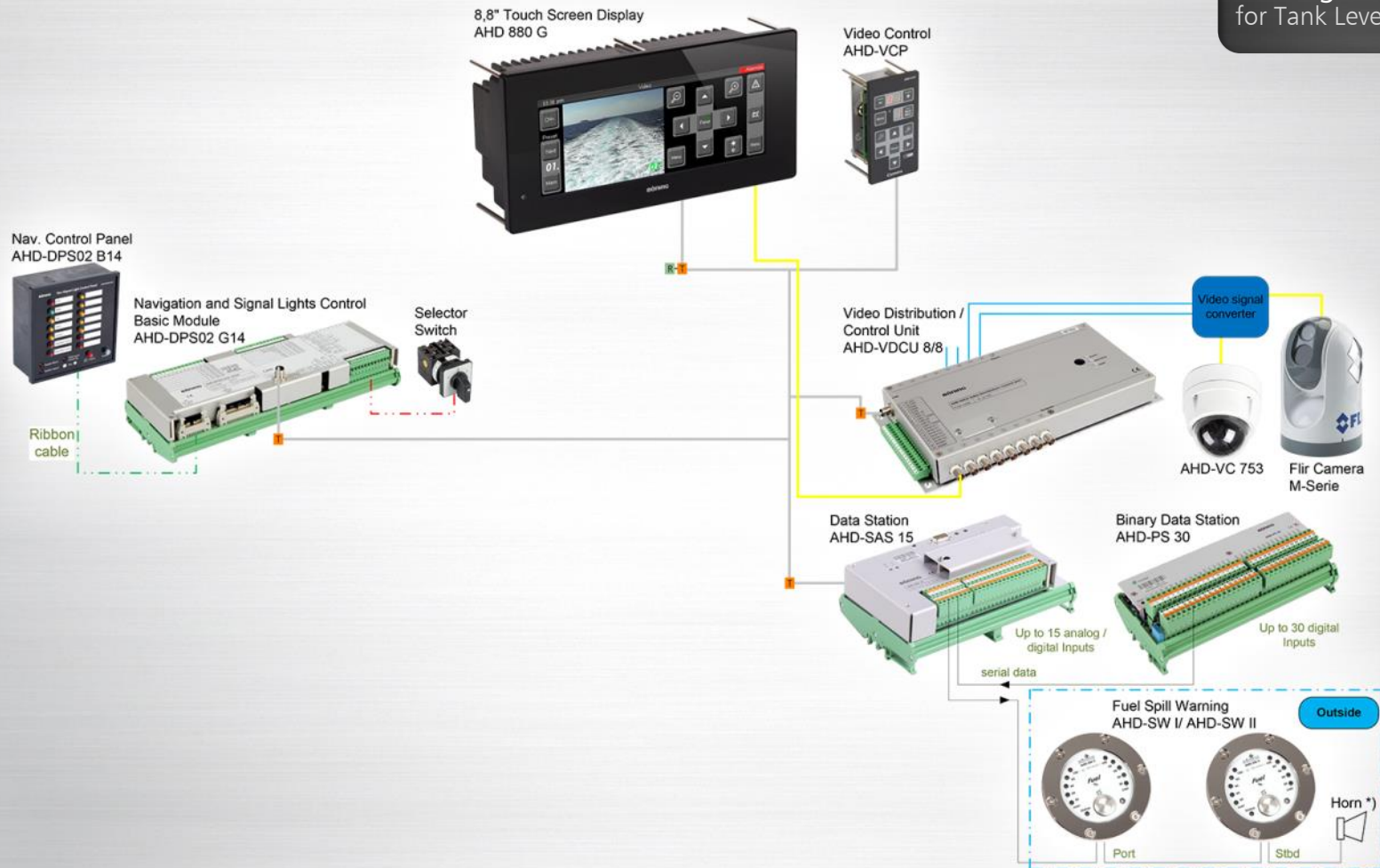
Horn *)

Port

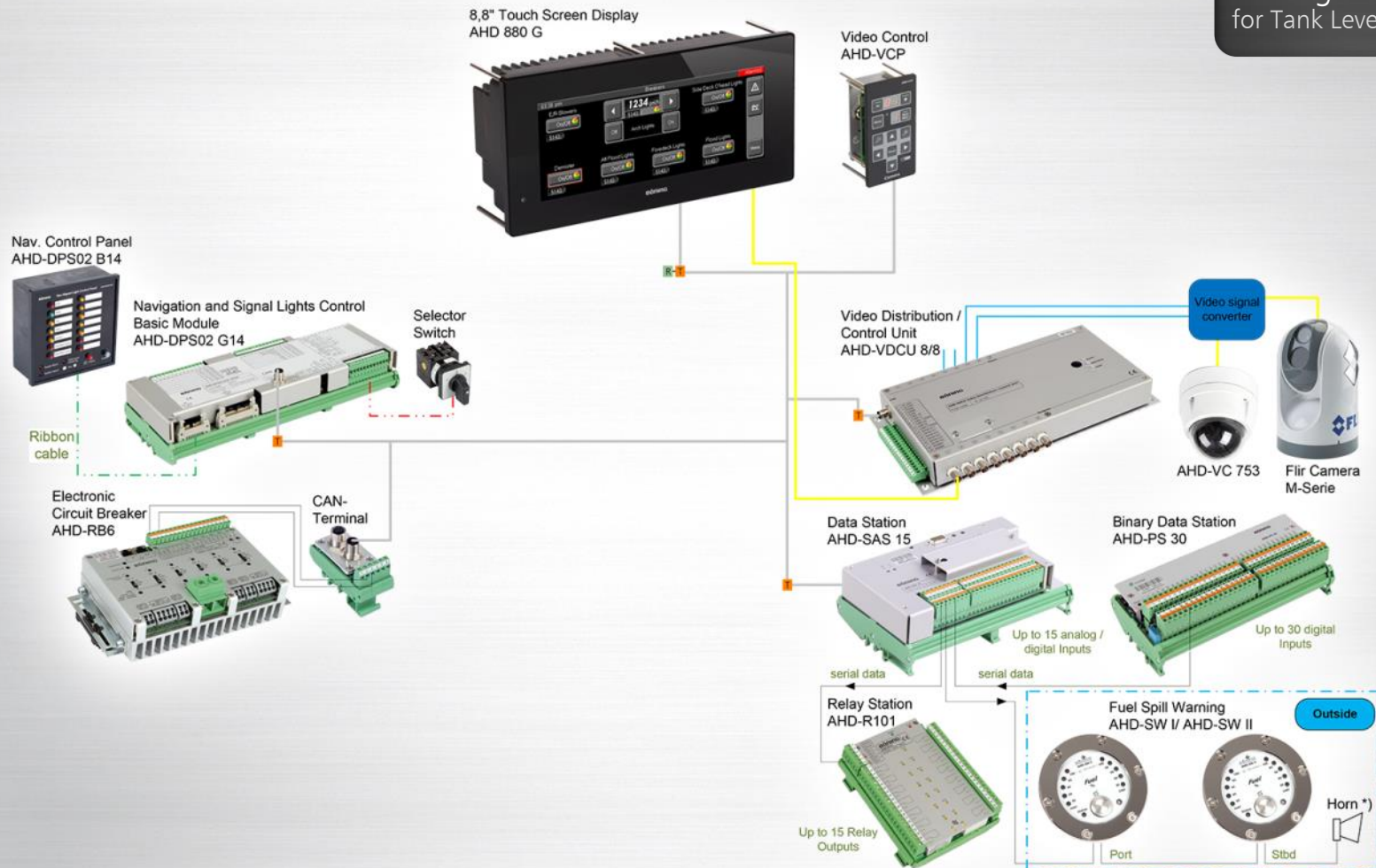
Stbd

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

Relay Station
AHD-R101



Up to 15 Relay
Outputs

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



Port

Stbd

Horn *)

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

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

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

Outside

Port

Stbd

Horn *)

Analog Data Station for Tank Level Bargraphs

19" Visualization Unit
AHD 1219 G

19" Visualization Unit
AHD 1219 G

iPad *)

Video Control
AHD-VCP

Nav. Control Panel
AHD-DPS02 B14

Navigation and Signal Lights Control
Basic Module
AHD-DPS02 G14

Selector
Switch

Logging - Function
AHD-WNL Server

WLAN Access

Video Distribution /
Control Unit
AHD-VDCU 8/8

Video signal
converter

AHD-VC 753

Flir Camera
M-Series

Ribbon
cable

Electronic
Circuit Breaker
AHD-RB6

CAN-
Terminal

AHD-DPU 9

PMS

Fire
Fighting

Furuno

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

Relay Station
AHD-R101

Up to 15
Relay Outputs

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

Outside

Port

Stbd

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

References

Ships with Böning Automation Systems



Realized Bridge Concept

References

Ships with Böning Automation Systems



Realized Bridge Concept

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Ships with Böning Automation Systems



Realized Bridge Concept

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Realized Bridge Concept

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Ships with Böning Automation Systems



Realized Bridge Concept

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Ships with Böning Automation Systems



Realized Bridge Concept

References

Ships with Böning Automation Systems



Realized Bridge Concept

References

Ships with Böning Automation Systems



Utility Boat | UT 4000

References

Ships with Böning Automation Systems



Diving Support Vessel | 42m

References

Ships with Böning Automation Systems





Supply Vessel

References

Ships with Böning Automation Systems



Tug Boats



References

Ships with Böning Automation Systems

Wind Cat | 24m



References

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Fast Ferry | 40m

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Fast Crew Supplier | 30/50 m

References

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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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