

Monitoring and Control Systems and Devices



New Releases in Ship Automation



Böning Automation Technology

New Releases 2013 in Ship Automation

For over 35 years, Böning Automationstechnologie GmbH & Co. KG has developed and manufactured devices and equipment for ship automation for commercial ships and yachts.

Generally speaking, the systems are assembled from serial components to suit every ship type perfectly, meeting their respective demands. Working closely together with our customers, we create solutions providing maximum safety and comfort for serial ships and especially for individual constructions.

The enterprise's cornerstone was set with the establishment of the Engineering Office Böning in 1977. In 1996, we became the Engineering Office Böning GmbH, renaming the company to Böning Automationstechnologie GmbH & Co. KG in 2003. From the onset, one of the enterprise's main focal points was the development and production of ship automation devices and systems. The current state of development is based on many years of experience garnered from our consistently implemented strategy: problem solving through working with our customers.

Böning Automationstechnologie GmbH & Co. KG's headquarters are located in Ganderkesee in the Greater Bremen area. In recent years, our office and production areas have grown to more than 2500 m². Currently more than 20 engineers work on developing our products. In addition, 90 skilled personnel ensure the flawless execution of our products in the production, distribution, purchasing, and administrative departments.

Böning Automationstechnologie GmbH & Co. KG has branch offices in Croatia and Brazil. The company is globally active through international distribution and service partners as well as regular participation in the industry's most important trade fairs. We currently pursue further partnerships in the process of international expansion.

Our company is certified in accordance with DIN EN ISO 9001:2010.



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VISUALIZATION EXAMPLES



Desktop PC | Notebook | Tablet

AHD-WNA

Internet Access to Böning Systems



Böning provides Internet access to the ship's current operational data and control system with AHD-WNA. Other than a web browser, the user requires no additional software for remote access. For a faster operation, an optional, free add-on can be installed. No additional hardware needs to be installed for working with AHD-WNA.

If additional hardware is installed, AHD-WNA makes the remote maintenance of the system possible: The system's configuration and its visualization can be updated via the Internet.

System benefits

- Quick Internet access to data and control system
- Visualization identical to ship displays
- Secure transmission of data and commands

Easy monitoring by any web browser

The user accesses the ship visualization known from the vessel's panel PCs in the web browser and operates it with mouse and keyboard.

Access to AHD-WNA is secured on multiple levels. Password protection and encrypted data transmission provide security against unauthorized access by third parties. To ensure the ship command's safety, the user cannot execute critical functions, such as starting and stopping the engine.

Naturally, already existing systems can be retrofitted with AHD-WNA.



boening.com/ahd-wna.html



AHD-WNL

Monitoring and Control with iPad® Integration

Böning Automationstechnologie offers a special app for the iPad®, downloadable at the Apple App Store, as an additional option to display ship data and control ship functions. It turns the iPad® into a full-fledged control and display device which can be connected seamlessly to the existing visualization environment on board, complementing it optimally.

This makes the ship data available at any time and everywhere on board. The user can even view the ship data and send control commands via the Internet, e.g. switch navigation lights or pumps, to the onboard system from any location with a corresponding connection to the Internet. Corresponding rights can be assigned to passengers to control the lights and air conditioning in their cabin, for example, or to view the ship's current position and speed.

The graphical user interface is adjusted to the permanently installed displays to ensure the highest degree of operational safety.

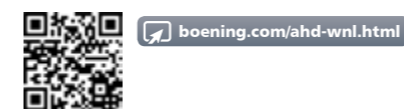
The system's core component is an industrial standard Windows® PC. The PC processes the onboard system's data and makes it available for the iPad® via the on-board network. The industrial PC is integrated into the ship's monitoring bus and provides all relevant data to the iPads®.

Several iPads® can be integrated with the system and operated with equal status.

The visualisation on the iPad® can be adapted to the visualisation on a connected display, such as AHD 1219.

Existing Böning systems can of course be retrofitted without any problem.

The iPad® can also be used as a mobile motor display to conveniently visualize the ship engine data of all major manufacturers (MAN, MTU, CAT, etc.).



System benefits

- Display of all ship relevant data on iPad®
- Fast integration into the existing onboard network
- Remote control of lights, air conditioning and much more



The data are transmitted from the PC to the (shipside) WLAN router of the on-board network and sent to the registered iPad® devices



ANALOG OUTPUT CONVERTER

AHD-AO6**Infinitely Variable Output
for Smooth Controls**

AHD AO6 is a 6-channel output unit for the generation of analog voltages or currents. The integrated high-precision analog output converters are galvanically isolated. Each output signal can be configured within standardized limit values, thus allowing an uncomplicated integration into third-party systems.

Configurable outputs

The electronic unit in profile module housing provides 6 configurable outputs (current 0-20mA, 4-20mA, 0-24mA or voltage 0-5V or 0-10V).

Additionally, 2 CAN interfaces ensure an uninterrupted communication with superior control or alarm systems.

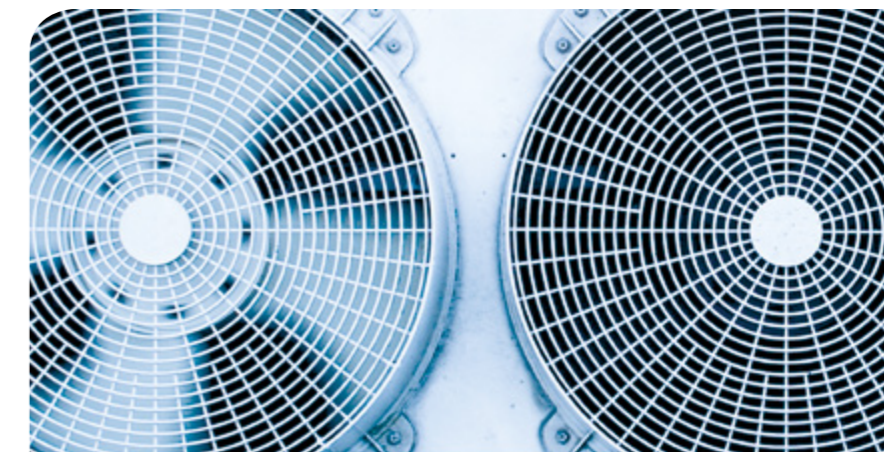
The device is suitable for example for the switching and control of fans, lamps and other electrical loads. Dimming of illumination can also be done over the electronic unit. With the decentralized installation the cabling effort is significantly reduced.

Switching via touch screen

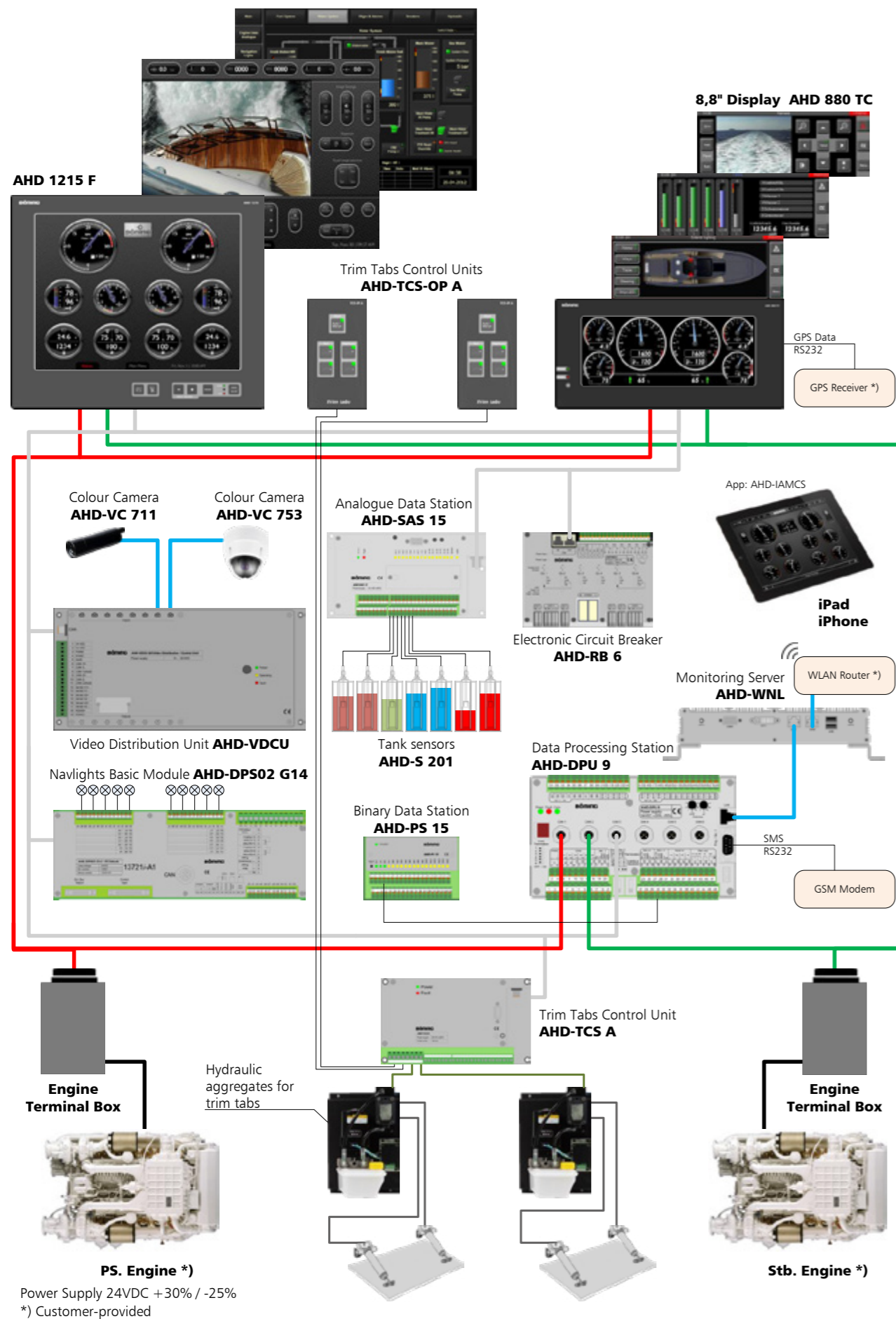
The functions of the AHD-AO6 can be easily switched from a central station – for example from a display AHD 1219 that is installed on the bridge.

**Device benefits**

- Control of electrical loads
- Configurable outputs (0 - 10V; 0 - 20mA)
- Decentralized installation, thus reduction of cabling efforts



Outputs	6 x analog output (current 0-20 mA, 4-20 mA, 0-24 mA or voltage 0-5 V, 0-10 V)
Interfaces	2 x CAN (galvanically isolated)
Power supply	24 V DC (+30% / -25%)
Current consumption	0.4 A @24VDC
Dimension (W x H x D)	146 mm x 112 mm x 60 mm
Degree of protection	IP 10
Weight	0.55 kg
Operation temperature	-10 °C ... +70 °C
Storage	-50 °C ... +85 °C
Approvals	in preparation



MODULAR MONITORING PACKAGES

System Design Example 2013

Modular Monitoring and Control Packages

Remote Monitoring and Control

This package consists of a processor unit AHD-DPU 9, a PC AHD-WNL, suitable for maritime use, a data station AHD-PS15, and one or several display units. The Ethernet /LAN Server AHD-WNL is used so that all data can also be accessed remotely, e.g. from the office. This server also receives the previously captured data from the processor unit AHD-DPU 9 via Ethernet. To be able to transmit these parameters from the ship, the AHD-WNL server is connected to the local router on board, which has an Internet connection and WLAN. Through it, the ship data are shown on the iPad® or iPhone®.

CCTV

Developed for the individual operation of up to 16 video cameras, including controlling pan, tilt, and zoom functionality. The system components can easily be integrated into a Böning ship alarm system, since the same displays are used here. Data communication also occurs on the same CAN bus. One can therefore do without special video monitors that have to be installed separately. Camera control and presentation of the real-time video signal occurs at any desired on-board installation location, via touchscreen displays with integrated operating elements or alternatively, via monitors with a separate Video Control Panel AHD-VCP. The system's main components are: Central Unit AHD-VDCU, Video Control Panel AHD-VCP, and the touchscreen color displays AHD 1215 15 (15") or AHD 880 TC (8.8").

Engine Start/Stop

Used with any engine by a wide variety of manufacturers, such as MAN, MTU, CAT, Volvo, Yanmar, Cummins, etc. The system encompasses the Engine Operation Panel for Ship Main Engines AHD-EOP and the AHD-EOP-Adapter for connection to the engine electronics, as well as further Dual Engine Operation Panels for Ship Main Engines AHD-DEOP for additional helms, e.g. the flybridge. With the Engine Operation Panel AHD-EOP, you can comfortably start and stop maritime diesel engines. Instead of a traditional ignition switch with start/stop keys and the accompanying extensive cabling, the AHD-EOP with integrated operating keys and transponder technology is used. This simplifies the cabling and significantly increases protection from unauthorized use.

Tank Data and Range Monitoring

This system comprises a Data Station AHD-SAS 15, which can monitor up to 15 different tanks and other components. By using the very precise Hydro-Static Level Transmitters AHD-S 201, the exact contents of each tank can be determined. To be able to also monitor e.g. bilges, Binary Data Station AHD-PS15, from which up to 15 switching contacts can be monitored, is deployed.

Trim Tabs Control

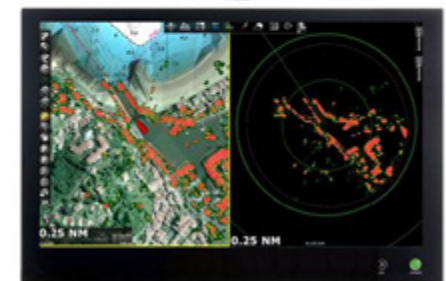
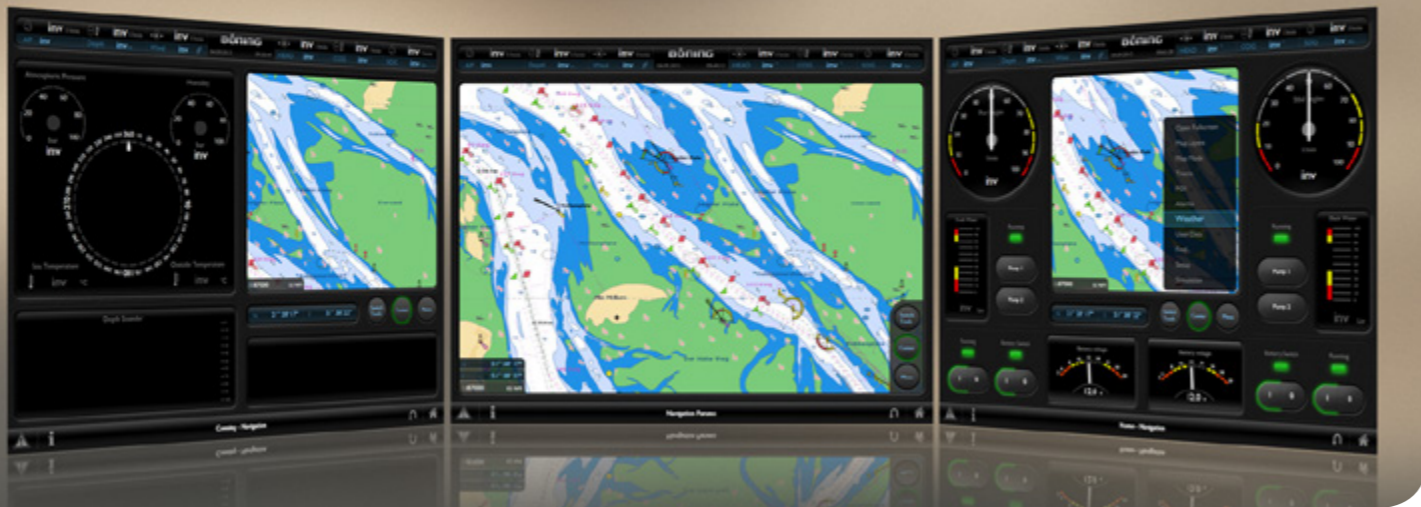
AHD-TCS, developed and patented by Böning, has been designed for use on board fast yachts, whose handling when cruising is optimized by controlling the trim tabs. The proper alignment of the trim tabs can significantly lower fuel consumption. The trim tabs cylinders are controlled via the Hydraulic Aggregate AHD-TCS HYD's electric directional valves. A special feature of this system is the omission of electric cabling on the vessel's exterior, which is often liable to break down. Instead of customary displacement transducers, special flow meters converting the hydraulic fluid's flow to impulses are used. These are captured by the Electronic Control Unit AHD-TCS A and used for calculating the trim tabs position.

Navlights

Comprises one Basic Module AHD-DPS02 G14 with 14 channels, e.g. the 8.8" Touch Screen Display AHD 880 TC, and if the ship is equipped according to the requirements of the classification societies, an emergency operating panel AHD-DPS02 B14. From the displays' touchscreens, the lamp circuits are activated and their status is shown on the displays. If an additional emergency operation unit is present, it is manufactured to customer specifications.

Engine Monitoring

Designed to upgrade engines with modern technology and adjust them to current requirements. Modern engines bundle and transmit their data to higher ranking systems via their own electronics. Older engines send their data separately to the respective display and alarm systems. With the Engine Monitoring package, the individual sensor data can be captured via Data Station AHD-SAS 15, electronically processed, and forwarded to a higher ranking system. This also includes the visual representation of all engine data on a display.



FURUNO MaxSea Time Zero

Integration of Monitoring and Navigation Software

Hydrographic Chart, Radar and Automation - Multifunctionality on a single panel.

As a consequent advancement towards a universal tool on the bridge, the seamless integration of radar, sonar, navigation, AIS and weather data on an intuitively operable chart display is the focus of the developers at Böning.

With this tool the vessel's captain always has an eye on important engine data while navigating. And the course is still visualized when the technical systems of the vessel are monitored and controlled.

The combination of ship and navigation data creates new possibilities for the calculation of additional trip data, such as even more precise current and long distance resource consumption or the storage of location-precise logs and route statistics.

To establish a concentration of systems and functions in the cockpit at sea – as it is a matter of course in automobiles – is a future aim of Böning.

Subsidiaries and Representatives



Headquarter

Böning Automationstechnologie GmbH & Co. KG

Am Steenöver 4
27777 Ganderkesee
Germany

Phone: +49 4221 9475-0
Fax: +49 4221 9475-22
E-Mail: info@boening.com
Web: www.boening.com

Italy

Böning Italia srl. Sales & Service

Corso Genova, 191
16033 Lavagna, GE
Italy

Phone: +39 0185 177 0876
Fax: +39 0185 177 0876
E-Mail: italia@boening.com

Brazil

Böning Imp. e Com. de Equip. Náuticos Ltda.

Rua Ulysses Pedroso de Oliveira Filho, 469
Valinhos-SP – CEP 13270-393
Brasil

Phone: +55 19 3849-5942
Fax: +55 19 3849-5942
E-Mail: luiz.barbarini@boening.com
Web: www.boening.com.br

Croatia

Böning d.o.o. Razvoj, proizvodnja i servisiranje elektroničke opreme

Prve Primorske čete 64A
HR-22211 Vodice
Croatia

Phone: +385 22 440693
E-Mail: marinko.vukancic@boening.com

Sales and service partners

For full contact information, please visit www.boening.com

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**Böning Automationstechnologie
GmbH & Co. KG**

Am Steenöver 4
27777 Ganderkesee
Germany

Telefon: +49 4221 9475 0
Fax: +49 4221 9475 22
E-Mail: info@boening.com