

Monitoring, Alarm & Control System **PLOTTER EDITION**



Automation Solution for Chartplotters

B:MACSPE

B:MACS_{PE}



- *Modular solution with all features of the BÖNING alarm system*
- *Visualization on chart plotters of leading manufacturers*
- *Developed for Garmin, Raymarine and Furuno plotters*
- *Modern network connection via HTML5 protocol*
- *Individually created graphical visualization*
- *Extensive possibilities for connecting external systems on board*
- *Large number of supported data protocols*

As a leading manufacturer of automation solutions for yachts, BÖNING Automationstechnologie has equipped about 13,000 ships with engine electronics and more than 1,500 yachts with ship alarm systems. For many years, the alarm, monitoring and control systems have been delivered with their own operating units in different sizes. The new solution **B:MACS_{PE}** was developed especially for connection to the chart plotter to expand the range of applications. The proven data stations are used, but this solution does not require a separate alarm display anymore.

The **B:MACS_{PE}** application is started via a graphic icon on the plotter. The connection to the automation system is made via a gateway, which prepares all automation data appropriately. Chart plotters from Garmin, Raymarine and Furuno are supported.

Visualization Examples

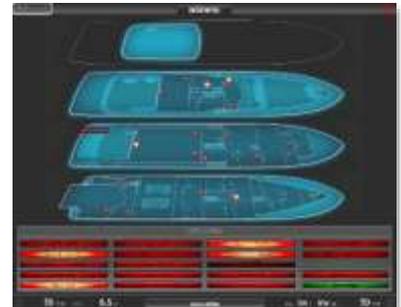
Main Menu



Steering



Doors & Hatches



Main Engines



Power Management



Air Conditioning



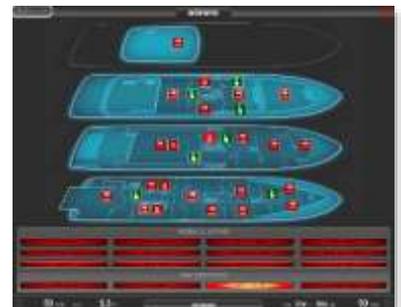
Battery Charger



Tanks



Fire Detection



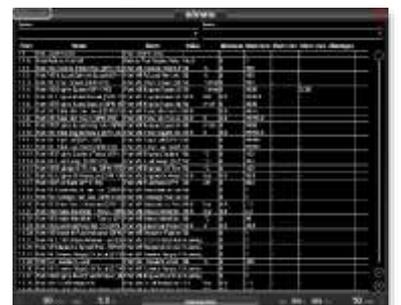
Bilge System



Wiper Control



Measuring Point List



B:MACS_{PE}

Hardware components

Various data stations are used for direct reading of analog inputs, digital inputs and for controlling relay outputs. A central data processing unit with six CAN bus interfaces (SAE-J1939, NMEA 2000), three serial lines (NMEA 0183, Modbus RTU) and network connection (Modbus-TCP) are used to read values and control external systems on board. In addition, various proprietary manufacturer protocols are supported to ensure best connectivity.

The system is modular and can be expanded with additional data stations, display units and systems of our portfolio. For example, additional display systems can be added via CAN bus to serve as a separate motor display. Furthermore, we recommend a connection to the BÖNING CabinCon system to display and control lights (Digital Switching via AHD-RB6), air conditioning and the status of other components on board comfortably inside the cabin



AHD-CPG – B:MACS_{PE} Chart Plotter Gateway

Gateway for visualization of the alarm system
2x LAN



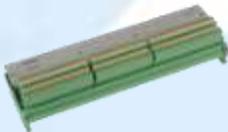
AHD-DPU9 - Data Processing Unit

6x CAN (galvanically isolated); NMEA2000 certified; 1x LAN (10/100 Mbit);
2x Serial (RS232/RS485/RS422); 1x Serial (RS232/RS485)



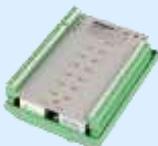
AHD-SAS 15 - Analog Data Station

15 input channels can be individually equipped with pluggable modules for the acquisition of analog and binary signals (current, voltage, resistance, thermocouples, contacts etc.)



AHD-PS47 – Binary Data Station

47 input channels for the acquisition of binary signals (potential-free contacts or system voltages switched via contacts or transistors, etc.)
Test button for earth and ground fault test



AHD-R101 – Relais Station

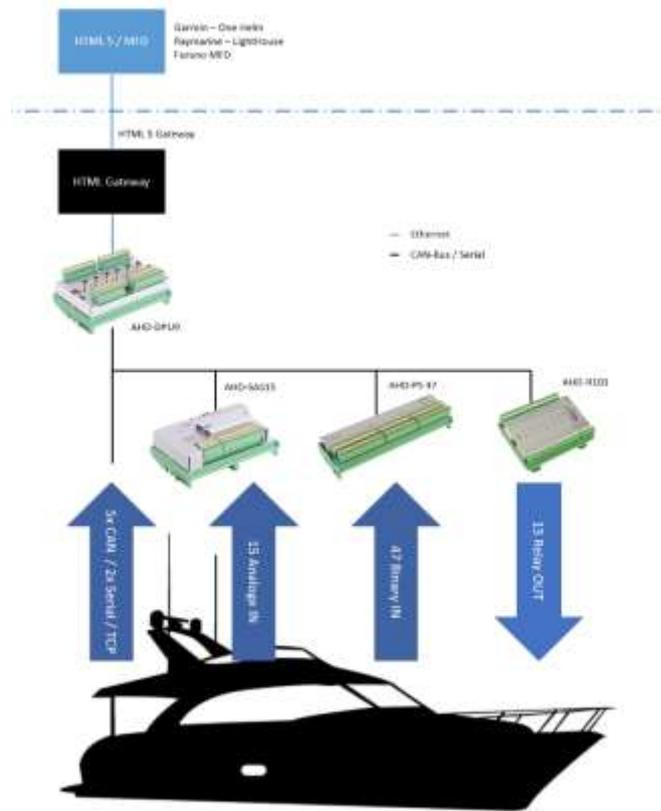
15 relay outputs with potential-free changeover contacts,
230VAC, 3A / 30VDC, 2A

Further data stations are listed on our website at www.boening.com

Schematic Overview

The **B:MACS_{PE}** Monitoring, Alarm and Control System is connected to the chartplotter via IP network. The Garmin "One Helm" system, the Raymarine "Lighthouse" as well as current MFDs from Furuno are supported.

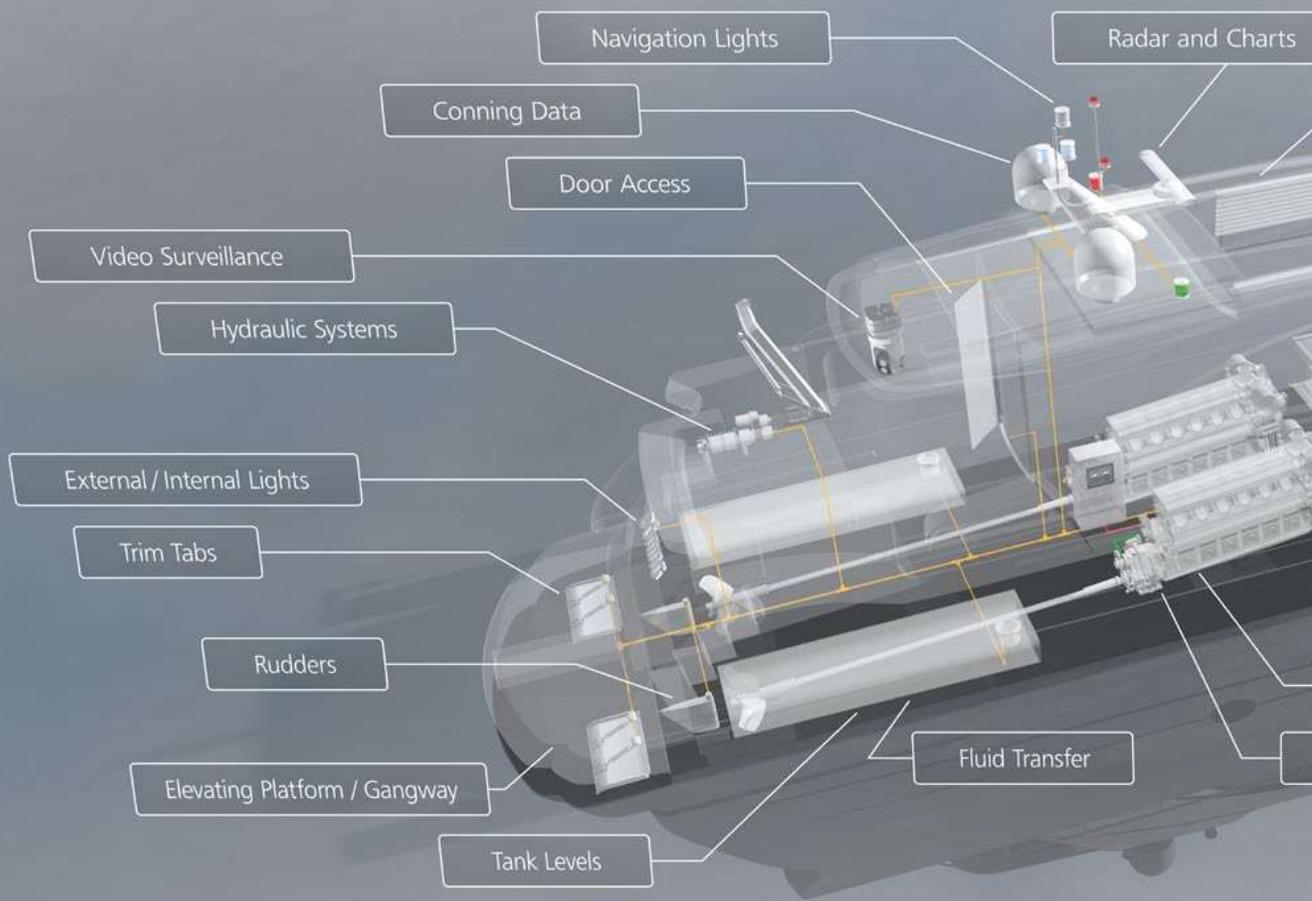
A **B:MACS_{PE}** Gateway converts all data of the alarm system into HTML5 format, in order to display it comfortably on project-specific visualization pages.



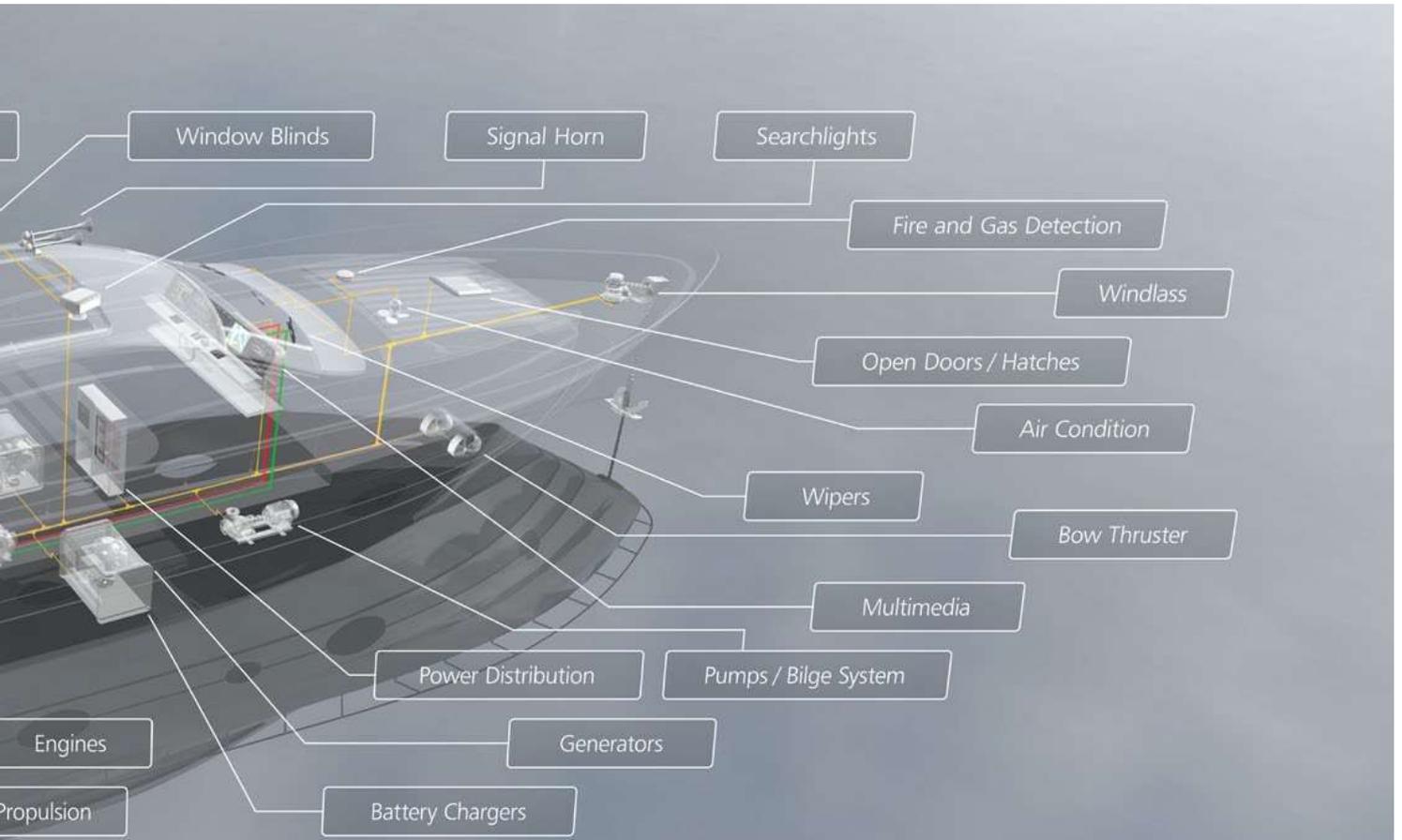
Remote Maintenance

In case the customer needs additional functions, changes of the system configuration or for general troubleshooting, a BÖNING technician can connect to the system and perform maintenance work without travelling.





B:MACS_{PE}





Headquarters

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.
Via Dei Devoto, 61-63
16033 Lavagna, GE
Italy

Phone: +39 0185 590098
Fax: +39 0185 590098
E-Mail: italia@boening.com
Web: www.boening.com

Spain

Böning Baleares S.L.U.
Avda. Gabriel Roca 36 Bajos 7014
Palma de Mallorca
Spain

Phone: +34 971 578942
E-Mail: info@boening.com
Web: www.boening.com

Brazil

Böning Imp. e Com. de Equip. Náuticos Ltda.
Av. 11 de Agosto, 1451, sl. 408, Jardim Ribeiro
Valinhos-SP, Brasil – CEP 13270-190
Brazil

Phone: +55 19 3859-1201
E-Mail: comercial@boening.com.br
Web: www.boening.com.br

USA

Böning USA, Inc.
4281 NW 1st Avenue
Boca Raton, FL 33431
USA

Phone: +1 561 372-9894
E-Mail: info.usa@boening.com
Web: www.boening-usa.com

Croatia

Böning d.o.o.
Razvoj, proizvodnja i servisiranje elektroničke opreme
Vukovarska 31
21220 Seget Vranjica
CROATIA

Phone: +385 21 207163
E-Mail: andrea.schmidt@boening.com

● Sales and Service Partners
For a list of our partners please visit our website

Visit our website for detailed information on our systems and products, latest news, exhibition dates and much more:

www.boening.com