

TYPE APPROVAL CERTIFICATE

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No. **61 646 - 13 HH**

Company **Böning Automationstechnologie
GmbH & Co. KG
Am Steenöver 4
27777 Ganderkesee, GERMANY**

Product Description **Integrated Alarm-, Monitoring and Control System**

Type **AHD-IAMC**

Environmental Category **C, (D), (F), EMC1**

Technical Data /
Range of Application **System Components:
AHD 570 (5,7" LCD Color Display) (9430610 HH), Env. Cat. D
AHD 651 (Operating Panel with 6,5" screen) (5989108 HH), Env. Cat. F
AHD 880 TC, AHD 880 E AHD 880 G Operating Panels with 8,8" touch screen
(*3)
AHD 1115 G, AHD 1119 G, AHD 1115 F, AHD 1119 F (Monitoring displays with
15" / 19" touchscreen glass or foil front) (6135513 HH)

AHD 1110 G 10" Display with glas front, Env. Cat. F (*5)
AHD 1110 F 10" Display with foil front, Env. Cat. F (*5)

AHD 1200 Embedded PC, 6 x CAN, 1 x RS232, 2 x LAN, 1 x DVI-I, 1 x Video in,
4 x Digital in, 5 x Digital out (*4).

AHD 1215 G, AHD 1219 G, AHD 1215 F, AHD 1219 F (Panel PCs with 15" / 19"
touchscreen glass or foil front) (6135613 HH);

AHD 1224 G 24" Panel PC with glas front, Env. Cat. F (*5)
AHD 1310 G 10" Panel PC with glas front, Env. Cat. F (*5)
AHD 1310 F 10" Panel PC with foil front, Env. Cat. F (*5).**

Test Standard **Guidelines for the Performance of Type Approvals, Chapter 2- Test
Requirements for Electrical / Electronic Equipment and Systems (VI-7-2),
Edition 2012**

Documents **Test reports: EMV Services 06-6135-2; Zeiss SJ-QP/EMV 052/2006; RMS 03-
12/2006; Circuit diagrams and product brochures in document folder, dated
2007-02-12, paconsult 08-1893, 08-1935 rev1.+ Böning amendment, EMV-
Services 07/7100-8-1. Software Questionnaire RC3.**

Remarks **See page 3. Product(s) approved by this certificate is/are accepted for
installation on all vessels classed by DNV GL.**

Valid until **2018-02-18**

Page **1 of 3**

File No. **I.A.03**

Hamburg, 2016-04-19

Type Approval Symbol



TYPE APPROVAL CERTIFICATE

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No. **61 646 - 13 HH**

AHD 406-2 (Cabin Duty Alarm / Engineer Call Panel)
AHD-DPU 9 (Data Processing Station) ()**
AHD 882 (Central Unit), Env. Cat. D
AHD-SAS 15 (Data Station for Analog and Binary Sensors), Env. Cat. D
AHD-UCC Repeater (*1)
AHD-UIC Compact Protocol Converter In: 2 x RS485, Out: 1 x CAN (*2)

AHD-R101 (Microprocessor controlled relay station)
AHD-PS 15, AHD-PS 30 and AHD-PS 47 (Data station for 15, 30 or 47 binary inputs)
AHD-PS 15B (Data station with Duty Selection Function)

AHD-DPS02 G14 (Basic Module for Navigation and Signal Light Control and Monitoring) (541608 HH)
AHD-DPS02 A07 (Extension Module for Navigation and Signal Light Control and Monitoring) (5471608 HH)
AHD-DPS02 BS (Operation and Indicator module for console) (5471608 HH)
A250 (Main selector switch for power supply) (54 71608 HH)
AHD-DPS02 E07, AHD-DPS02 E14 (Emerg. Switch Units with 7/14 switches) (5471608 HH)

AHD-WAOP K (Personnel Alarm System) (9506210 HH)
AHD-WOAP (BNWAS) (9506210 HH)

Software / Functions:

Alarm and monitoring function with graphic data presentation
Alarm history page and printer logging
Alarm/Control and Monitoring, Graphic presentation of ship's data
Alarming with date and time stamp / logging
Analogue and binary indications
Duty alarm system
Duty engineer call alarm system
Graphic presentation of process values and pumps, valves, tanks (MIMICS)
Grouping of alarms
Navigation and Signal Light Control and Monitoring
Self-diagnostic alarms
Supervision of machinery states and annunciation of abnormal situations
Tank measurement and indication
Valve and Pump Remote Control
Personnel Alarmsystem
BNWAS

Valid until **2018-02-18**

Page **2 of 3**

File No. **I.A.03**

Hamburg, 2016-04-19

Type Approval Symbol



TYPE APPROVAL CERTIFICATE

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No. **61 646 - 13 HH**

Interfaces:

CAN Bus (galvanically isolated, termination and address) connection for external system plug acc. to DeviceNet-Standard (Input) with protocols e.g. J1939, NMEA 2000 and proprietary protocols e.g. MAN, MTU, VOLVO, Webasto etc.

Binary input / output channels (optocoupler, serial, static)

Relay output (galvanically isolated)

Binary relay outputs for LED light or bulb light

Binary and analogue inputs

LAN (RJ45, 10/100 MBit) with protocols e.g. Mod Bus TCP

Serial (RS232/RS485/RS422, switch-able, termination switchable) with protocols e.g. NMEA 0183, Modbus RTU, EIB-KNX and and proprietary protocols e.g. MTU serial, Mastervolt etc.

PAL 50Hz, DVI and VGA

Add. Documents / Test Reports:

-AHD-PS_15B_AH-2_WachBA_DE

**(*1) Zeiss SPU-QK/EMV 038/2012, paconsult 11-3669,
TÜV Nord EMV Test Report No. 12/12124-2-1, paconsult 12-4220
Data sheet AHD-DPU 9, AHD-UCC**

**(*2) Test reports : EMV-09/8175-5; Paconsult 09-02238; Böning FAT test protocol ver.1-VIKING.
Data Sheet.**

**(*3) Test Reports: EMV Services 09/9062-1, Paconsult 09-2234B, Paconsult 09-2458, Paconsult 09-2604,
Paconsult 09-2605.
Böning EMC Test Protocol vers.1, dated 2013-04-11.**

**(*4) Test reports: TÜV Nord EMC-Labor, Test Report No.12/12124-2-2; Paconsult Test Report
No. 12- 4220. Data sheet AHD_1200_DAT_de_V5_20150107.**

**(*5) Test Reports Zeiss SPU_QK/EMV 028/2015 AHD-1110F, SPU_QK/EMV 033/2015 AHD-1224G.
Paconsult No. 14-6023B, 14-6023C
Data sheet PaB-1379 V5, 10.12.2015, PaB-1428 V3, 10.12.2015, PaB-1437 V2, 29.10.2015,
PaB-1438 V2, 29.10.2015, PaB-1275 V3, 06.01.2014.**

Remarks:

-Remarks and validity of referenced certificates to be observed.

-System to be evaluated for the respective application.

Valid until **2018-02-18**

Page **3** of **3**

File No. **I.A.03**

Hamburg, 2016-04-19

Type Approval Symbol

