



Marine & Offshore

Certificate number: 07553/F0 BV

File number: AP 3061

Product code: 4431H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Böning Automationstechnologie GmbH & Co. KG
Ganderkesee - GERMANY

for the type of product

INTERNAL COMBUSTION ENGINE CONTROL UNITS
Type: AHD 414 and AHD 414A.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
EC Code: 31

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 12 Jun 2023

For Bureau Veritas Marine & Offshore,
At BV HAMBURG, on 12 Jun 2018,
Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The **AHD 414** is a start-stop control unit for auxiliary diesel engines for control desk mounting.
The **AHD414A** is an alarm or safety system for engines for switchboard mounting.

Main characteristics AHD 414:

Power supply:	24V DC or 12V DC
Inputs:	8x digital
	1x serial interface (TTY)
Outputs:	7x relay contact
	1x serial interface (TTY)
Degree of protection:	IP54 (front / with front cap)
	IP44 (front / without front cap)
	IP20 (rear)
Software version	AHD 414 1C 60 F5 xxxx

Main characteristics AHD 414A:

Power supply:	24 or 12V DC $\pm$ 25%
Inputs:	10x binary inputs with wire break monitoring facility
	1x serial interface (TTY)
Outputs:	3x relay contact
	1x serial interface (TTY)
Degree of protection:	IP54 (front / with front cap)
	IP44 (front / without front cap)
	IP20 (rear)

2. DOCUMENTS AND DRAWINGS:

- Technical description
- Technical specification
- Circuit diagram 960501
- According to documents filed in AP 3061 and AP 3542

3. TEST REPORTS:

Aqua-Signal AG:

- QTR F12 dated 04.08.93

Regelungs- und Messtechnik Dynamic Test Systems:

- 1-04/96 dated 30. April 1996
- 06-12/2001 dated December 24, 2001

Mikroelektronik Anwendungszentrum Hamburg GmbH:

- 96/6030-1-4 and 1-4a

EMV Services GmbH & Co. KG:

- 07/7100-5-1 dated 30.08.07
- 09/9062-4 dated 15/10/2009
- 02/2064-4 dated May 14, 02
- 02/2064-7 dated May 14, 02

4. APPLICATION / LIMITATION:

- 4.1 - Bureau Veritas Rules for the Classification of Steel Ships
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT** and **AUT-IMS**.
- 4.3 - Bureau Veritas Environmental Category, **EC Code: 31**
- 4.4 - The equipment AHD 414 fulfils the EMC requirements for installation in General Power Distribution Zone.
- 4.5 - The equipment AHD 414A fulfils the EMC requirements for installation on General Power Distribution Zone by installation in metal cubicles and with using of filter: Schaffner FN-2080-6-06.
- 4.6 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.
- 4.7 - Depending on the Application, Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category II or III Equipment.
- 4.8 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **Böning Automationstechnologie GmbH & Co. KG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Böning Automationstechnologie GmbH & Co. KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

Böning Automationstechnologie GmbH & Co. KG

Am Steenöver 4

27777 Ganderkesee

GERMANY

5.4 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

7. OTHERS:

7.1 - It is the responsibility of **Böning Automationstechnologie GmbH & Co. KG - GERMANY** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate n° 07553/E0 BV issued on 22 Oct 2012 by the Society.

***** END OF CERTIFICATE *****