



Marine & Offshore  
Division

Certificate number: 23152/B0 BV

File number: AP4132

Product code: 4410H

*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 LOCAL MONITORING PANEL**  
Alarm-, Start-/Stop- and Safety System for Diesel Engines  
of type: AHD 514

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships  
EC Code: 33B

*This certificate is issued to attest that BUREAU VERITAS 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: 07 Apr 2022**

**For BUREAU VERITAS,**

At BV HAMBURG, on 07 Apr 2017,

Dirk Hoefner



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. 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 Division 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 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.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

The modules and panel of **AHD 514** system are intended to be used on a diesel engine for the following functions:

- Monitoring and alarm
- Local Indication of parameters and status
- Start/Stop
- Engine protection (automatic and manual)

#### **1.1 - Main Specifications:**

- Power Supply: 24 VDC
- Protection index: IP20 for modules and panel, IP44 for front side of panel, IP10 for relay station

#### **1.2 - Characteristics:**

**AHD 514-A:** Alarm system and start/stop system

Software version : V3.12.xx

- 6 analog inputs (4...20mA)
- 6 analog inputs (PT100/PT1000)
- 1 engine speed input (galvanic isolated)
- 2 binary inputs (wire break monitored)
- 8 binary inputs (control)
- 2 binary inputs (fuse trip, charging alternator)
- 8 relay outputs (potential free)
- 2 transistor outputs (wire break monitored)
- 1 analog output (1...5V, 1...10V)
- 2 status LED's
- 2 CAN bus interfaces
- 1 RS232 for diagnostic
- serial I/O for extensions

**AHD 514-S:** Safety system

Software version: V1.19.xx

- 2 binary inputs (wire break monitored, emergency stops)
- 5 binary inputs (wire break monitored, automatic stops)
- 1 engine speed input (galvanic isolated)
- 4 relay outputs (potential free)
- 3 transistor outputs (wire break monitored)
- 1 analog output (4...20mA)
- 10 status LED's
- 1 CAN bus interface
- 1 serial output for an extension

**AHD 514-OP:** Operator panel

Software version: V1.27.xx

- 5.7" LCD color display (640x480 pixels)
- 7 membrane keys
- 2 status LED's
- 1 CAN bus interface

**AHD-R101:** Relay station

Software version: V1.53

- 15 relay outputs (potential free)
- 2 serial inputs

### 2. DOCUMENTS AND DRAWINGS :

- Operating Instruction DiV-1238, dd.: 2010-03-29
- Data sheet: GoS-1024 Rev.:17.09.2008 for AHD-R101
- Diagrams: AHD570D1-081201DD, AHD514D1-090501DD, AHD\_514SD1\_090201DD

**3. TEST REPORTS :**

- paconsult GmbH: 09-2664 dated 23Oct.2009; 09-2665 dated 13Nov.2009 and 08-1893 Rev.2 dated 09June,2008
- Carl Zeiss Jena GmbH: P-QK/EMV 060/2009\_02 dated 2010-06-08 and SJ-QP/EMV 053/2006 dated 30.01.2007
- EMV Services GmbH & Co. KG: 09/9062-2-1 dated Nov.09,09 and 06/6135-2 dated Dec.29,06
- RMS: 03-12/2006 dated 2007-01-31
- Lindenberg Anlagen GmbH: LA3-M5600-182153 dated 01.Aug.2016

**4. APPLICATION / LIMITATION :**

- 4.1 - Bureau Veritas Rules and Regulations 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: 33B.**
- 4.4 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.
- 4.5 - Only Hardware and Firmware successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.
- 4.6 - Applications with two operator panels for an engine or a panel on the bridge are to be evaluated in each case.
- 4.7 - Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category II Equipment.

**5. PRODUCTION SURVEY REQUIREMENTS :**

- 5.1 - The above mentioned modules and panel 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 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

**6. MARKING OF PRODUCT :**

- Maker's name or trademark.
- Serial number of the units.
- Equipment type number or model identification under which it was type-tested.

**7. OTHERS :**

- 7.1 - It is **Böning Automationstechnologie GmbH & Co. KG's** responsibility 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° 23152/A0 BV issued on 21 Sep 2010 by the Society.

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