



Lloyd's  
Register

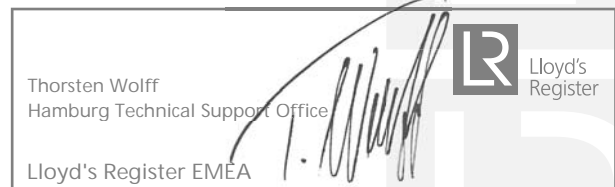
## Type Approval Certificate Extension

*This is to certify* that Certificate No. 10/20016 for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

<b>PRODUCER</b>	Böning Automationstechnologie GmbH & Co. KG
<b>PLACE OF PRODUCTION</b>	Am Steenöver 4 27777 Ganderkesee Germany
<b>DESCRIPTION</b>	Alarm-, start-/stop- and safety system for diesel engines
<b>TYPE</b>	AHD 514-A, AHD 514-S, AHD 514-OP
<b>APPLICATION</b>	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3 and ENV4 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - 2002.
<b>ADDITIONAL TESTS</b>	Low temperature test (-25°C/16hrs)
<b>DESIGN CODE</b>	Manufacturer's specification.

<b>Certificate No.</b>	10/20016 (E1)
<b>Issue Date</b>	8 July 2015
<b>Expiry Date</b>	18 May 2020
<b>Sheet</b>	1 of 2



Thorsten Wolff  
Hamburg Technical Support Office  
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**OTHER CONDITIONS**


The complete installation is subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels.

*"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."*

*The attached Design Appraisal Document No. HTS/ETS 32049-15 and its supplementary Type Approval Terms and Conditions form part of this Certificate.*

All other details remain as the previous Certificate No. 10/20016 to which this extension should be attached.

**Certificate No.** 10/20016 (E1)  
**Issue Date** 8 July 2015  
**Expiry Date** 18 May 2020  
**Sheet** 2 of 2

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LR031.1.2013.12

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# Marine Design Appraisal Document

Lloyd's Register EMEA  
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E-mail: hamburg-technical-support@lr.org

Date  
**08 July 2015**

Please quote this reference number on all future communications  
**HPC1562061/32049-15/TW/HN/SC**

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002  
ISSUED TO: BÖNING AUTOMATIONSTECHNOLOGIE GMBH & CO. KG  
FOR: ALARM-, START-/ STOP- AND SAFETY SYSTEM FOR DIESEL ENGINES  
TYPE: AHD 514-A, AHD 514-S, AHD 514-OP  
TYPE APPROVAL CERTIFICATE NO. 10/20016 (E1)**

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

## ADDITIONAL APPROVAL DOCUMENTATION

Form2571	Application for Type Approval	26.02.2015
Form2502TA (2015.01)	Request for Marine Services – Type Approval	14.04.2015
Dok-ID: PaB-1271 V9	AHD 504/514 Operation	Undated
AHD 514 S /MEC24	Softwareänderungshistorie AHD_514_S - V1.18	
	Softwareänderungshistorie AHD 514 OP /MEC24	
	Softwareänderungshistorie AHD 514 A /MEC24	13.07.2012
Unnumbered	Mail from 14:24 Subject: 10/20016 and 10/20017 software version	01.07.2015

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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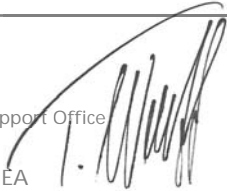

### Supplementary Type Approval Terms and Conditions

*Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.*

*Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.*

*Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.*

*Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.*

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LR031.1.2013.12

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Part 3

Alarm and Monitoring Systems

Producer/Licence No.	Item Description	Technical Details	Category/Additional Tests	Remarks	Cert. No.
<p><b>Böning Automationstechnologie GmbH &amp; Co. KG</b>  <b>Am Steenöver 4</b>  <b>27777 Ganderkesee</b>  <b>Germany</b></p>	<p>Alarm-, start-/stop- and safety system for diesel engines</p> <p>Types</p> <p>AHD 514-A alarm system and start-/stop unit</p> <p>AHD 514-S safety system</p>	<p>Power supply: 24 V d.c.</p> <p>6 analog inputs 4-20mA          6 analog inputs PT100/PT1000          1 RPM input, galvanic isolated          2 add. binary inputs          6 binary inputs for control</p> <p>2 voltage input for fuse trip and charging alternator          2 voltage input for speed-up/down          8 binary relay outputs 6A          2 binary transistor outputs (with wire break monitoring)          1 voltage output 1-5V/1-10V          2 status-LEDs          Interfaces: 2 CAN bus, RS232 diagnostic, serial for I/O extensions (e.g. AHD R101)</p> <p>2 emergency stop inputs (direct acting) with wire break monitoring          5 binary inputs for automatic shut down with wire break monitoring          5 binary inputs for control (reset, override...)          1 RPM input, galvanic isolated          4 binary relay outputs, 6A</p> <p>2 transistor outputs 8A, with wire break monitoring          1 transistor output 8A, short-circuit-proof with wire break monitoring          1 current output 4..20mA          2 status-LEDs          8 alarm-LED for override, emergency stop, overspeed and 5 other safety stop criteria          Interfaces: 1 CAN Bus for communication with AHD 514-A and AHD 514-OP, serial output</p>	<p>ENV1          ENV2          ENV3          ENV4          (2002)</p> <p>Low temperature (-25°C/16hrs)          Enclosure IP 44 (frontside AHD 514-OP)</p>	<p>Expires: 18 May 2020</p> <p>The complete installation is subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels.</p>	<p>10/20016 (E1)</p>

Part 3

Alarm and Monitoring Systems

Producer/Licence No.	Item Description	Technical Details	Category/Additional Tests	Remarks	Cert. No.
	AHD 514-OP operator panel	5.7" colour display with automatic dimmed illumination indication of most important analog engine parameters on each page engine status indication alarm pages for acknowledged and unacknowledged alarms membrane keys for engine start/stop, buzzer stop, acknowledgement, reset and page selection buzzer CAN interfaces for communication with AHD 514-A and AHD 514-S			

