





Type Approval Certificate

Germanischer Lloyd

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

Certificate No.	8637809 HH
Company	Böning Automationstechnologie GmbH & Co. KG Am Steenöver 4 27777 Ganderkesee, GERMANY
Product Description	Decentralized Bow Thruster Control- and Operation unit
Type	AHD 501 (Control Unit) AHD 502 (Operation Unit)
Environmental Category	F/D, EMC1
Technical Data / Range of Application	AHD 501 (Env. cat. D) Inputs: 2 analog PTC-DIN44081 Drilling, 2 analog 0...2000mA (AC), 16 n/o contacts, Outputs: 11 relay-contacts 250 VAC/1500 VA, 2 relay-contac 250 VAC/4000VA, Interface: 1 CAN-Bus communication, AHD 502 (Env. cat. F): Inputs: 1 serial input, 1 binary input, Outputs: 1 relay-contact (40VDC or 250VAC /2A), 1 relay-contact (40VDC/6A), Interfaces: 3 CAN-Bus communication, 1 RS422 for IEC-61162-1, membrane keyboard. Degree of protection: IP20, AHD 502: IP56 (front), Power supply: 24V DC, SW-Version: AHD501: 1.3, AHD502: 1.07.
Test Standard	Guidelines for the Performance of Type Approvals Chapter 2, Edition 2003. Regulations for the Use of Computers and Computer Systems.
Documents	Test report : EMV Services 08/8175-2, Paconsult 09-2238, Paconsult 09-2334A. Checklist AHD501 502. SW questionnaire SW-E-AK3.
Remarks	Sufficient intervisibility between main and wing operator units required.
Valid until	2014-11-30
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File No. I.B.04	
Hamburg, 2009-12-14	

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Jürgen Wittburg

Jens Dietrich

This certificate is issued on the basis of "Regulations for the Performance of Type Tests, Part 0, Procedure".