



Certificate no.:
TAA00003HE

TYPE APPROVAL CERTIFICATE

This is to certify:

that the smartbridge 2.0 components

with type designation(s)

AHD-DC TS, AHD-EST V3 NO/NC, AHD-ORP V2, AHD-TPJ V2, AHD-CUC V3, AHD-RO 15, AHD-SLP V2, AHD-USP 15

issued to

Böning Automationstechnologie GmbH & Co.KG

Ganderkesee, Niedersachsen, Germany

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
AHD-DC TS	D	B	A	B	A
AHD-EST V3 NO/NC, AHD-ORP V2	D	B	A	B	*
AHD-TPJ V2	D	B	A	B	Front B (IP56), Rear A
AHD-CUC V3	D	B	A	B	A
AHD-RO 15	D	B	A	B	A
AHD-SLP V2	D	B	A	B	Front B (IP56), Rear A
AHD-USP 15	D	B	A	B	Front B (IP56), Rear A

*Required protection according to relevant rules shall be provided upon installation on board

Issued at **Hamburg** on **2024-11-13**

This Certificate is valid until **2029-11-12**.

for **DNV**

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Jens Dietrich**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

AHD-CUC V3 CAN-USB converter
AHD-DC TS Display-Control panel with trackball
AHD-EST V3 NO Emergency stop control unit for diesel engine control system
AHD-EST V3 NC Emergency stop control unit for diesel engine control system
AHD-ORP V2 Override-Panel for diesel engine control
AHD-SLP V2 Control panel for searchlight, CAN bus communication
AHD-TP J V2 Thruster control panel with joystick, CAN bus communication
AHD-USP 15 Panel with 15 keys, CAN bus communication
AHD-RO 15 Relay station with 15 switching outputs, redundant CAN bus.

Power supply: 24VDC.

Approval conditions

The Type Approval covers hardware listed under Product description in context of DNV RU-SHIP Pt.4 Ch.9 Sec.5. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Tests carried out

Applicable tests according to DNV CG-0339, 2021.

Tests according to IEC60945, 2002 (for protected and exposed equipment), Ch, 8.2, 8.3, 8.4, 8.7, 9.2, 9.3, 10.3, 10.4, 10.5, 10.6, 10.8, 10.9.

Compass safe distance measuring reports acc. to IEC60945, 2002, Ch. 11.2. for AHD-TP J V2, AHD-EST, AHD-ORP and AHD-DC TS.

Marking of product

Manufacturer, Type designation, serial number, power supply.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE