

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Anti-Heeling Control System**with type designation(s)
AHS_TKT

Issued to

Tanktech Co., Ltd.
Busan, Republic of Koreais found to comply with
DNV GL rules for classification – Ships**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Temperature	A
Humidity	B
Vibration	A
EMC	B
Enclosure	B

Issued at **Hamburg** on **2020-01-09**This Certificate is valid until **2025-01-08**.DNV GL local station: **Gimhae Station**for **DNV GL**Approval Engineer: **Dariusz Lesniewski**

Joannis Papanuskas
Head of Section

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.



Product description

Anti-Heeling control system for use under supervision only
Manual- and auto-mode of operation
PORT and STBD push buttons for manual control
List-angle indication, alarm at $\pm 2.5^\circ$ list, emergency auto-stop at $\pm 5^\circ$ list
Lamp test
Control panel main components:
- Power supply with noise filter
- Main board
- Display board
- Inclinator
- Emergency switch
Software version: V. 2.0

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram

The Type Approval covers hardware and software listed under Product description.

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 [1.4] will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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.



Job Id: **262.1-032677-1**
Certificate No: **TAA00002KM**

END OF CERTIFICATE