DNV·GL

Certificate No:
TAA000002C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Indicating System

with type designation(s)
MMCU-500, HRD-28R/P/T

Issued to
HANLA IMS CO.,LTD.
Busan, Republic of Korea

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

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

Type	Temperature	Humidity	Vibration	EMC	Enclosure
MMCU-500	**A**	**A**	**A**	**A**	**IP23**
HRD-28R/P/T	**D**	**B**	**A**	**A**	**IP67**

This Certificate is valid until **2017-08-16**.

Issued at **Busan** on **2015-08-17**

for **DNV GL**

DNV GL local station: **Pusan**

Approval Engineer: **Byoung So Lee**

Baeg Soon Choi
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Tank monitoring system consisting of ;

- Control cabinet comprising MMCU- 500 (communication unit), HRD-28B(IS barrier) and shock absorber unit
- HRD-28R Radar level transmitter
- HRD-28P Pressure transmitter
- HRD-28T Temperature transmitter

Application/Limitation

The Type Approval covers hardware listed under Product description. 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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

Clause for application software control.
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval.
Major changes in the software are to be approved before being installed in the computer.
A Certification of Application Functions may be required for the particular vessel.

Installation in hazardous area
This certificate does not cover the approval of the installation in a hazardous area. It shall be evaluated in each case in accordance with the applicable rules and regulation.

Installation of control cabinet
Control cabinet shall be installed using shock absorber unit supplied by Hanla IMS.

Type Approval documentation
Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006

Periodical assessment

The scope of the retention/renewal survey 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 survey 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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE