

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Water Ingress Detection**with type designation(s)
HWID Series

Issued to

Hanla IMS Co., Ltd.
Busan, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships and offshore units**DNV GL rules for classification – High speed and light craft****Application :****Location classes:****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	D (Sensors) A (Alarm panels) B (Barrier box)

This Certificate is valid until **2021-07-18**.Issued at **Busan** on **2016-07-19**for **DNV GL**DNV GL local station: **Busan**Approval Engineer: **Jong Yun Kim**-----
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.

Product description

Water ingress alarm system for cargo holds, closed dry & void spaces and fore peak tanks on bulk carriers, consisting of:

- Main Alarm Panel with alarm annunciator module Au-160D(W)
- Repeat Alarm Panel (optional) with alarm module Au-160R
- Sensor : Electrode type level switch with self test device (conductivity sensor)
- Types : ELS-1ES-1FPT-T/-C/-S, HWDC-100
- Intrinsically safety barrier box with barriers KFD2-ER-Ex1.W.LB.[EEx ia] IIC according to certificate DMT 00 ATEX E033
- Junction boxes : HWDJ-501/-502

Application/Limitation

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
- Power supply arrangement (may be part of the System block diagram)
- Sensor arrangement and installation (responsibility of installer)

The Type Approval covers hardware listed under Product description.

The sensors are regarded as simple apparatus.

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 A 202 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Type Approval documentation

A.
B.
C.
D.
E.

A.
B.
C.
D.

Tests carried out

Applicable tests according to:

IEC 60092-504

IEC 60529

Performance testing according to IMO Res. MSC. 188(79)

Job Id: **262.1-010105-4**
Certificate No: **TAA00000KG**

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