

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Gauge Glass Level Indicator

with type designation(s)

Model RLG-LP -11/13/14

Issued to

Hanla IMS Co., Ltd.

Busan, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

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

Temperature range: Max. 200 °C

Max. working press.: 3 bar

Design: Flat glass

This Certificate is valid until **2021-11-14**.

Issued at **Høvik** on **2016-11-15**

for **DNV GL**

DNV GL local station: **Busan**

Approval Engineer: **Sinisa Sedlan**

Marianne Spæren Marveng
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.

Job Id:
Certificate No: **TAP00000N7**

Product description

Flat level gauge consisting of borosilicate glass incorporated in a stainless steel (STS 304-CP) frame with bronze (BC 6). Self Closing valves at the top and bottom (type LP-11), or a Self Closing valve at the bottom and a collar at the top (type LP-13), or a Self Closing valve at the bottom and a vent pipe at the top (type LP-14).

Connection size: JIS 5K 20A, 25A

Application/Limitation

The design review has only covered the strength of pressurized parts. The functionality of the component has not been considered in the approval.

These level gauges can be installed as a means of level indication for tanks containing flammable fluids. They are to be fitted with a self-closing valve at each end, and are to be protected against mechanical damage. (Ref. DNV GL Ship rules Pt.4 Ch.6 Sec.4 [11.6.2])

These level gauges are not permitted to be used on fuel oil tanks on passenger ships, where a penetration is required below the top of the tank. (Ref. DNV GL Ship rules Pt.4 Ch.6 Sec.4 [11.6.4])

Type Approval documentation Tests carried out

Burst test at five times the design pressure, vibration test, function test and hydrostatic pressure test

Production testing

Each level gauge shall be subjected to a hydrostatic pressure test at 1.5 times the allowable pressure at room temperature. The test pressure shall be applied and maintained for at least 30 minutes to permit visual examination of all surfaces and joints. The component shall exhibit no sign of plastic yielding or leakage.

Certification

No product certificate is required.

Marking of product

For traceability to this type approval the valves are to be marked as a minimum with:

- Manufacturers name or trade mark
- Type designation
- Design pressure
- Year of manufacture

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment every second year and before the expiry date of this certificate, to verify that the conditions for the type approval are complied with.

When possible, this assessment may be harmonised with normal surveys for product certification and / or other surveys and audits carried out.

The main elements of the certificate retention survey are:

- Verification of the TA applicant's production and quality system w.r.t. ensuring continued
- consistent production of the type approved products at the TA applicant's own premises
- Review of Type Approval documentation and assurance that it is still used as basis for production
- Review of possible changes in design, materials and performance
- Assurance of traceability between manufacturer's product type marking and Type Approval Certificate.

Renewal should be applied for in writing before the certificate expires.