DNV·GL

Certificate No:
TAP00000W7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hydrostatic Level Gauge Indicator

with type designation(s)
HS-SPCG-V150, HS-SPCG-150S, HS-SPCG-F150

Issued to
Nantong Haishi Marine Machine Co., Ltd
TONGZHOU CITY JIANGSU, China

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL

Max. working press.: 2 bar

Issued at **Hamburg** on **2017-07-06**
This Certificate is valid until **2022-07-05**.
DNV GL local station: **Nantong CMC**

Approval Engineer: **Hagen Markus**

for **DNV GL**

Olaf Drews
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.

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Product description

Self-power hydrostatic level gauge with isolating valve consisting of the following main components:
Type HS-SPCG-150S without isolating valve for installation on tank top.

Component	Type	Drawing or design code reference	Material designation
Level gauge, dial size 150mm, Dual Scale (level in m / volume in m³)	HS-SPCG-V150, HS-SPCG-150S, HS-SPCG-F150	HS-SPCG-01	SUS304
Capillary tube		HS-SPCG-02	SUS304
Isolating valve	HS-SPCG-V150	GB/T 584-1999	Hpb59-1 (Brass rod with lead)
Non-return valve	HS-SPCG-F150	HS-SPCG-F150	F150-00
- tank connection flange, valve disk			- 2Cr13
- valve disk soft seal			- Silicone rubber
- gasket flange			- Graphite
Connection flange on tank	HS-SPCG-F150	05100CBM1012-89	Q235A
	HS-SPCG-150S	JIS 5k-125A	SUS304
	HS-SPCG-V150	05100CBM1012	Q235A
Mounting flange on isolating valve	HS-SPCG-V150	05100CBM1012-89	SUS304
Flange gasket material	HS-SPCG-V150 HS-SPCG-150S	n.a.	Graphite
Diaphragm with protector cover	HS-SPCG-F150	HS-SPCG-04 HS-SPCG-F150-03	SUS304

Application/Limitation

The level gauge is type approved for tank liquid level indication.

M.A.W.P	2.0 bar
Temperature range	- 20°C up to +100°C
Accuracy / Overload	+-2.5% / 120% of maximum measuring range limit
Media	Fresh water, Flammable fluids with a flashpoint > 60°C

For selection of the level gauges for the corresponding application and media as well as installation the instructions of the manufacturer are to be observed.

Application on tanks containing sea water

The diaphragm material SUS304 should not be considered suitable for use in seawater applications. However, certain stainless steels with higher contents of chromium, molybdenum and nitrogen have improved resistance to localised corrosion. These include high molybdenum austenitic steels and ferritic-austenitic (duplex) steels. Even these steels cannot be considered immune to attack under all situations; avoidance of stagnant sea water conditions and removal of welding oxides are some of the important factors to the successful use.
For application in sea water systems stainless steel grades with a minimum pitting resistance equivalent number (PREN) of 30 shall be used.
Material certificate shall include appropriate confirmation tests per ASTM A262, Practice E, Copper - Copper Sulphate - Sulphuric Acid Test or to another recognised standard.
Refer to DNVGL Rules Part 2 Section 3 – Corrosion testing.

Application on tanks containing flammable fluids

The level gauge indicators of types **HS-SPCG-V150 and F150 are** not approved for the use on fuel tanks and oil tanks on passenger ships. For this application tank level gauges of type HS-SPCG-150S are to be used.

Test carried out

Pressure test, Burst pressure test, Vibration test

Type Approval documentation

Marking of product

Each device shall bear at least legible and durable marking on the body or on a type plate fixed securely to the body as follows:

- Manufacturer's Mark, Type, DNVGL Type Approval Certificate number

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

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.