

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Level Indicating System and Water Ingress Detection System**

with type designation(s)

LEVELMASTER H8, Levelmaster H8 WIM, Levelmaster H8 C

Issued to

**Kockum Sonics AB
Malmö, Sweden**

is found to comply with

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

Temperature	A (DU 350: B)
Humidity	B
Vibration	A
EMC	B
Enclosure	B (DU 350: Panel front only)

Issued at **Høvik** on **2017-09-29**This Certificate is valid until **2021-12-31**.DNV GL local station: **Malmö**for **DNV GL**Approval Engineer: **Geir Bjørn Alnes**

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Odd Magne Nesvåg
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: **262.1-005101-5**
Certificate No: **TAA00001D3**

Product description

Level gauging and water ingress monitoring system Levelmaster H8 comprising the following main components:

Description	Maker	Art. No.
Sensor and Control Unit	Kockum Sonics	27000004
Power Supply	Kockum Sonics	2472 1205
Solenoid Valve	Alt.1: Webber Alt.2: GEVA	336041201PC 24VDC, 6W G80-A 4-5 24VDC, 6W , 2472 1085
Valve Control Board	Kockum Sonics	2063-3041

Display units:

Level monitoring: DU 350
Draft monitoring: DU 350 Draft
Water ingress monitoring: DU 350WIM

Approval conditions

The Type Approval covers hardware listed under Product description.

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)

Intrinsic safety:

Only pneumatic components in classified areas

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 [1.2.3] 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 acc. to DNVGL-CG-0339.

Type test according to IACS UI SC180.

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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.

END OF CERTIFICATE