

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Alarm System

with type designation(s)

OAS-5;HL-8903/8903A, HHL-8903/8903A and H-HHL-89-LNG

Issued to

**Autronica Fire and Security AS
Tønsberg, Norway**

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:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
OAS-5	A	B	A	A	A
HL-8903/8903A, HHL-8903/8903A and H-HHL-89-LNG	N/A	N/A	B	N/A	D (IP68, 10m water gauge)

Issued at **Høvik** on **2017-06-23**

for **DNV GL**

This Certificate is valid until **2019-06-30**.

DNV GL local station: **Sandefjord**

Approval Engineer: **Jan Aksel Nilsen**

.....
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.



Product description

High Level Alarm System Type: OAS-5

Consisting of:

- Electronic cabinet including the following main components:
 - Ex Alarm unit AU1 / AU1.1
 - Common Alarm unit CU2
 - Power supply type PULS ML70.100 / ML10.100
- Alarm Panel type Omicron OAM
- Level switches:
 - HL-8903/8903A
 - HHL-8903/8903A
 - H-HHL-8903-LNG.

Application conditions

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)

The Type Approval covers hardware listed under Product description.

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.

Application/Limitation

The level switches are specially designed for cargo area for ships with the following class notations: "Tanker for Oil", "Tanker for Chemicals" and "Tanker for Liquefied Gas"

For the level switches only the mechanical design is evaluated.

This approval does not include alarm horn and alarm lamp.

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
Ex1-W00	EExiaIIC	Nemko nr. Ex 95D072

Job Id: **262.1-006495-6**
Certificate No: **TAA000019X**

Type Approval documentation

- "High Level & Overfill Alarm System for: (Newbuilding number and system version number)."
- Booklet containing Technical/Installation description with drawings dated 04.09.1995.
- Vibration test and temperature/humidity test by NEMKO report no.199512239.
- EMC tests by Swedish Test and Research Institute, Borås Reference 95F50693
- Ex certificate of conformity NEMKO Ex.95D072 for Eex(ia)-IIC.
- Test of level switch as simple apparatus by NEMKO M 69958.
- Drawings MD3-220 & MD3-222 rev.2, MD3-320 & MD3-320A rev.0, ME3-006 and MD3-301A-1
- DnV Test report 89-1048 dated 20.06.89
- Brochure: OMICRON Level Alarm System
- Booklet containing Technical documentation including modifications dated 2005-01-14
- Type approval periodical assessment report for A-14319, dated 2017-03-31.

Tests carried out

Applicable tests according to Standard for Certification No. 2.4.

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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE