



Certificate No:
TAA000036A

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Water Ingress Detection

with type designation(s)
M-WIA

Issued to

Musasino Co., Ltd.
Tokyo, Japan

is found to comply with

DNV 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.

Location:

Temperature	A (Control panel), D (field units)
Humidity	B
Vibration	A
EMC	B
Enclosure	A (Control panel), C (field units)

Issued at **Høvik** on **2023-04-04**

This Certificate is valid until **2028-04-03**.

DNV local unit: **Yokohama**

for **DNV**

Approval Engineer: **Frode Nygård**

Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-12

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Product description Level Aeran X Water ingress detection/alarm system for cargo holds on bulk carriers
For installation as water level detector in hold, ballast and dry spaces according to SOLAS XII Reg. 12.

The system consists of:

Control Unit and Indicator:

Multi Pulse Purge Unit (MPP)	Component	Model	Temperature location class
	Control unit	L-CORE	A
	Power supply	PSU	
	Air Supply Unit	FR150-02-BG-F1	
		MMF150-02-F1	
Indicator Unit	Alarm Box	MIF-C2	

Detector:

Water Ingress Alarm System Sensor	Component	Model	Temperature location class
	Detector	LAX-ADM/T	D
		LAX-ADM/C	
		LAX-ADM/CF	
	Purge head	LAX-PH/P	

Approval 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)
- Sensor arrangement and installation (responsibility of installer)

The Type Approval covers hardware listed under Product description.

When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Ex-certification is not covered by this certificate.

Application in hazardous area 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.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.
Performance testing according to SOLAS XII Reg.12 and IACS SC180.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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