Certificate No:
TAA000037B

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Water Ingress Detection

with type designation(s)
WATER INGRESS MONITORING - XT-WIMAS

Issued to
XTronica AS
Flatåsen, **Norway**

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.

Temperature	**B**
Humidity	**A**
Vibration	**A**
EMC	**A**
Enclosure	**B**

Issued at **Høvik** on **2022-12-20**
This Certificate is valid until **2024-12-19**.
DNV local unit: **Trondheim**

Approval Engineer: **Geir Bjørn Alnes**

for **DNV**

Siri Tag
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.

Product description

XTronica Water Ingress Monitoring System intended for for cargo holds on bulk carriers and have capabilities for Ballast tanks, service tanks, cargo holds and void space.

The XTronica Water Ingress Monitoring System comprises the following units as required:

Main Cabinet:

12“ Touch Screen and CPU Controller Module	XTALC-CB000[1)]
Ethernet/RS485 Communication Module	XTALC-CM000[1)]
Configurable DI/DO Modules	XTALC-DIOxxx[1) 4)]
Configurable AI/AO Module(s)	XTALC-AIOxxx[1) 4)]

Sensor Cabinet for Cargo Hold:

Pressure sensor (Ex)	DX19-DMP 457[2)]
Pressure sensor (non-Ex)	XT-PTxxx[3)] (“xxx” indicate the pressure range and variants.)
Pressure sensor (Ex)	DXT-PTxxx[3)] (“xxx” indicate the pressure range and variants.)

Water ingress float switch for void space XT-LS00xxx (“xxx” indicate the measurement range and variants.)
In addition to model XT-LS00XX, other DNV type approved float switches from other manufacturers can be used.

[1)] Hardware is covered by separate type approval certificate TAA00002S7
[2)] Hardware is covered by separate type approval certificate TAA00001GR
[3)] Hardware is covered by separate type approval certificate TAA00001JY
[4)] xxx, a combination of three digits and letters indicate the number of channels and variants

Control HMI software version – 0.1.0 is included.
Software number and versions are described in document “Software change handling procedure for XTronica Water Ingress Monitoring System.

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Test program for application software at manufacturer

The Type Approval covers hardware and software listed under Product description.

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The Certification is to be performed at the manufacturer before the system is shipped to the yard. After certification the clause for software control will be put into force.

Software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Application/Limitation

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.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	**Certified**	**Certificate No.**
DX19-DMP 457	Ⓔx II 1G Ex ia IIB T4 Ga Ⓔx II 1D Ex iaD 20 T85 °C	IBExU 10 ATEX 1068X dated 2020-06-24

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