



Certificate No:
TAA00002YJ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Monitoring System

with type designation(s)
WAA700

Issued to

ABB Ltd., Korea
Cheonan, Korea, Korea, Republic of

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 classes:

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	B

Issued at **Høvik** on **2022-07-08**

This Certificate is valid until **2027-07-07**.

DNV local station: **Ulsan**

for **DNV**

Approval Engineer: **Frode Nygård**

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Marta Alonso Pontes
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: 2021-03

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Product description

The WAA700 Exhaust gas wash water monitoring system is designed to measure and display pH, Turbidity and PAH components of wash water.

The WAA700 comprise one cabinet (dimensions HxWxD:1400x800x400) with display unit in front for local operation and alarm handling.

The measured concentrations are available for further use in the process control system.

The measurement is typically performed downstream Marine DeSOx scrubbers.

Serial interface RS485 Modbus RTU for external control of analyser (start/stop) and for transfer of data from analyser to logger.

Main Cabinet, WAA700			
Main Supply	220 VAC 1 PH		
Communication	RS485		
Firmware	SM5F		
System Components	PAH Sensor : enviroFlu-HC-500 Turbidity Sensor : ABB ATS430 Turbidity Transmitter : ABB AWT440 pH Sensor : ABB TBX5 pH Sensor Transmitter : ABB Ax460 Display Unit : ABB SM500F		
Operating temperature	5-55°C		
Sensor module	PAH	Turbidity	pH
Brand/Type	TRIOS enviroFlu-HC-500	ABB ATS430	ABB TBX561
Measuring technique	Fluorescence	Nephelometry	Glass electrode
Range	0-500 ppb	0-4000 NTU	0 – 12 pH
Accuracy	0.3 ppb	+/- 2% of FS	0.01 pH
Output	4-20 mA	RS-485 Modbus	0-10, 0-20 or 4-20 mA
Power	12-24 VDC	12-24 VDC	12 to 30 VDC
Power consumption	3.5 W	100 mA @ 24 VDC	10 W
Operating temperature	5-55°C.	0-60°C	-20 to 55°C

Place of manufacture

Binconet Marine Solutions Co.,Ltd.
-31, 91beongil Cheonggangro
Jangan-eup, Gijang-gun,
Busan
Republic of Korea

Approval conditions

This Type Approval Certificate covers hardware and software as listed under Product Description.

DNV shall be informed prior to installation of WAA700 onboard DNV classed vessels.

Application/Limitation

This Type Approval certificate does not cover requirements of MARPOL Annex VI, Regulation 4 & MEPC.259(68), MARPOL Annex VI Regulation 13 and NTC2008. Installation and performance as required by these regulations shall be verified separately.

EMC in the range 2 GHz to 6 GHz according to IACS Unified Requirements E10 Rev.7 has not been documented. EMC up to 6 GHz must additionally be documented for installation on ships contracted for construction on or after 2022-01-01.

Correct configuration and set up for each delivery to be tested during commissioning after installation.

The WAA700 Exhaust gas wash water monitoring system shall be installed, operated and calibrated in accordance with the requirements specified in the Installation Manual and Operation Manual for ABB Water Monitoring System.

Type Approval documentation

Tests carried out

Applicable tests according to Class guideline DNVGL-CG-0339, November 2016.

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