



Certificate No:
TAA0000361

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
Wärtsilä real-time gas analyzer

Issued to

Wärtsilä Finland Oy
Vaasa, Pohjanmaa, Finland

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	C
Humidity	B
Vibration	A
EMC	A
Enclosure	B

Issued at **Høvik** on **2024-08-10**

This Certificate is valid until **2026-08-09**.

DNV local station: **Finland CMC**

for **DNV**

Approval Engineer: **Krzysztof Aleksander Jankowski**

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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.



Place of system manufacture

The system is manufactured, mounted and tested at:

Wärtsilä Finland Oy,
Teollisuuskatu 1,
65170, Vaasa,
Republic of Finland

Product description

Wärtsilä real-time gas analyzer – system for measuring gas composition. Based on measured by analyzer gas composition, the Wärtsilä methane number (WMN) and lower heating value (LHV) are calculated by previously installed UCP¹⁾ system and provided as input for the engine and power control systems.

- 1) UCP - Unit Control Panel. Made by ABB panels are equipped with a PLC system, handling various control functions for engine and auxiliaries, as well as communication with engine and external systems. There is one UCP for each engine.

Separately Type Approved hardware		
Module type	Description	Type Approval Certificate ²⁾
FGA	Fuel Gas Analyzer	TAA000034C
Siemens 6GK5308-2FL10-2AA3	Ethernet switch ³⁾	TAA000037T
Moxa EDS-408A-MM-ST	Ethernet switch ³⁾	TAA000006N
Westermo L210-F2G	Ethernet switch ³⁾	TAA000000R
Moxa MGate MB3170	Ethernet-to-serial converter	TAA000006T
Beijer X Pro 4	Gas Analyzer Cabinet touch panel	TAA00000N8
2) Latest and valid revision applies.		
3) Units are used alternatively.		

System software		
Module	Description	Software version
FGA	Fuel Gas Analyzer	1.20
UCP	UCP Analyzer package software	Major: 1
		Minor: 0

Maintenance of Software versions is described in document “Change management procedure for Real-time Gas Analyzer” (Doc. ID: DMTA00078433, Rev. -, dated 2024-04-24).

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Application/Limitation

1. This certificate is valid only for systems applications made and delivered by production facilities listed under Place of system manufacture.
2. The Type Approval covers system design principles and software listed under Product description.
3. List of Control and Monitored points settings shall be in accordance with engine intended function and comply with DNV rules requirements relevant for vessel main class and assigned class notations.
4. System shall be delivered in line with general principles shown in type approved documentation and with relevant for delivery DNV rules.
5. On board testing shall be performed according to applicable chapters of “Wärtsilä real-time gas analyzer – Commissioning test protocol” (Document id.: DMTA00078396, Rev. -).
6. The Cyber Security requirements as per DNV rules for classification – ships Pt.6 Ch.5 Sec.21 and IACS E27 are not covered by this Type Approval certificate. Separate certification process must be performed where applicable.

Approval conditions

The following information of the actual application is to be submitted as document: “**Approval Template for Wärtsilä real time gas analyzer according to TAA0000361**” (Doc.id.: DSCA00841356) for approval in each case:

- Reference to this DNV Type Approval Certificate,
- Information how many systems will be delivered for one vessel,
- Software versions used in specific delivery,
- Reference to project specific wiring diagrams numbers,

- Planned delivery date,
- Confirmation that delivered system complies with conditions stated in this Type Approval Certificate.

Product certificate

As long as the units are covered by this Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 will **not be** required for system applications made and delivered with accordance to requirements listed in this Type Approval Certificate. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Application 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.

Type Approval documentation

Tests carried out

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, components 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