



Certificate no.:
TAA000038N

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Engine Safety, Control and Alarm System**

with type designation(s)

The "UNIC" for Wärtsilä Methanol Dual Fuel engine series W32M used in single engine, multi engine and auxiliary applications.

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.

System minimum location classes according to data listed in Appendix 1:

Temperature	B
Humidity	B
Vibration	B
EMC	A
Enclosure	Required protection according to the Rules to be provided upon installation on board.

Issued at **Høvik** on **2024-10-07**

This Certificate is valid until **2026-10-06**.

for **DNV**

DNV local unit: **Finland CMC**

Approval Engineer: **Krzysztof Aleksander Jankowski**

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 manufacture

The UNIC system is manufactured (or assembled), mounted and tested at:

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

Product description

UNIC: Engine safety, control and monitoring system which utilize **HSR (High-availability Seamless Redundancy)** – Ethernet based communication, intended for type approved, Wärtsilä 4-stroke, with jerk pump injectors, Methanol dual fuel (DF), in-line, engine series **W32M**.

Separately Type Approved hardware		
Module type	Description	Type Approval Certificate ¹⁾
CCM-30	Cylinder Control module	TAA00000DX
ESM-20, -21, -22	Engine safety modules ²⁾	TAA0000132
LDU-30 ³⁾	Local display module / HMI panel ³⁾	TAA00000FY
COM-10	Communication module	TAA00000DW
IOM-20	I/O module	TAA00002GM
1) Latest and valid revision applies. 2) ESM modules are used alternatively. 3) LDU-30 can be replaced by another, suitable for usage in machinery spaces, DNV Type Approved HMI panel which has the same functionality.		

System software		
UNIC type with designation code	Software	Code description
UNIC DI DF Methanol	6.5.X.X	DI – Diesel jerk injectors DF – Dual Fuel
UNIC DI DF Methanol SME	6.5.X.X	DI – Diesel jerk injectors DF – Dual Fuel SME – Single Main Engine
X - Shall be represented by fix digit. Changes shall be evaluated by DNV.		

Maintenance of software versions is described in document DBAB166787, Rev. j.
The software configuration numbering is defined in the document DBAA030801, Rev. am.

When the type approved functionality enabled by application 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 for engines series listed under Product description, provided they hold a valid DNV Type Approval Certificate.
2. The Type Approval covers system design principles and functionality enabled by application software listed under Product description and described in Type Approval documentation.
3. The UNIC system is suitable for use in Single Main Engine and multi-engine propulsion plants or auxiliary duties.
4. The UNIC system is **not** suitable when Single Main Engine is shaft generator prime mover.
5. The UNIC system do **not** provide safety monitoring of annular space in fuel double walled pipes, required by DNV rules for classification – Ships Pt.6 Ch.2 Sec.6.
6. The UNIC system do **not** provide control and safety of Methanol fuel pumps.
7. The UNIC system do **not** provide control of Inert gas Double Block and Bleed valves.
8. The UNIC system is prepared to control dual fuel engine start in methanol mode.
9. LDU-30/HMI panel is not fulfilling DNV rules requirements for alarm handling and presentation. Connection to separate/additional equipment shall be provided.
10. When LDU-30 has been replaced by HMI panel, reference to panel Type Approval Certificate number shall be provided in Approval Template.
11. The UNIC system shall be delivered in line with approved by this Type Approval Certificate principals shown in documentation listed in appendix 1.

12. List of Control and Monitored points (with defined alarm, load reductions and shutdowns, including identification of which automatic safety actions can be overridden) settings shall be in accordance with engine intended function (propulsion, auxiliary, etc.) and shall comply with DNV rules requirements for vessel main class and relevant class notations.
13. Certification testing/Factory Acceptance Test (FAT) shall be performed according to applicable chapters of "UNIC, additional functional test for FAT" (Document id.: DBAD630104, Rev. q, dated 2018-11-15).
14. 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 for approval in each case:

- Correctly filled in **"Approval Template for Wärtsilä engine control, safety and monitoring system "UNIC" according to TAA000038N"** (Doc.id.: DMTA00078151)

Product certificate

Each delivery of the application system **is to be** certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system, preferably at the engine/system application maker integrating control, monitoring and safety system, before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Application software control

All changes in application 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, 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