Certificate no.:
TAA00003KY

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Engine Control System

with type designation(s)
CM2450

issued to
Cummins Inc.
Columbus, IN, USA

is found to comply with
DNV GL 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	**D**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**Required protection according to the Rules to be provided upon installation on board**

Issued at **Hamburg** on **2025-04-15**
This Certificate is valid until **2030-04-06**.
DNV local unit: **Certification & Inspection Services**

for **DNV**

Approval Engineer: **Jens Dietrich**

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 USD 300 000.

Product description

Engine Control Module CM2450, Part number 6517920
MPC: Cobra55 MPC57xx 8 MB Internal Flash 512 KB Internal RAM, 32Mbyte Flash.
Power supply: 24VDC.

Functions:
-Fuel Injection valve control
-Speed governing
-Engine Control- and Monitoring

System-Software: 74.xx.xx.xx

Place of manufacture
Vitesco Technologies LLC, Seguin, TX, USA

Application/Limitation
1. This system is only to be used as engine control system for multi engine propulsion plants, auxiliary and emergency duties.
2. The speed governing parameters and the internal overspeed limitation of the ECM shall be configured to fulfil the requirements described in DNV Rules Ships Pt.4 Ch.3 Sec.1 [5.2.1] or [5.2.2], respectively.
3. An independent safety system shall be installed in addition to this control system.
4. This certificate covers ECM for speed governing and engine control only. Required local indications and alarms shall be checked in conjunction with the respective application system providing HMI-, alarm- and safety functions.

The Type Approval covers hardware and basic software based on applicable parts of Pt.4 Ch.9 stated under Product description. When the hardware is used in applications to be classed by DNV, the following documentation of the actual application system 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)
- List of control and monitored points
- Software version for particular delivery
- Test procedure for integration test (see below)

Product certificate
As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1, 1.4 will not be required. As required by DNV Pt.4, Ch.3, sec.1, 4.2.3 an integration test is to be conducted at the engine/system application maker integrating control, monitoring and safety system, before the system is shipped to the yard.

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.

Tests carried out
Applicable tests according to Class Guideline DNV CG-0339, August 2021,
IACS UR E22 Integration test,
Load step and transient speed response test.

Marking of product
Type label showing:
Cummins
ESN = Engine Serial Number
P/N: ECM Part Number
S/N = ECM Serial Number
D/C = ECM Date code i.e. manufacturing date code
E/C = ECM Code
Type designation CM2450 (the number behind the CM2450 is the ECM Data plate Part Number).

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, after 3.5 years and at renewal of this certificate.

END OF CERTIFICATE