

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Engine Control System**with type designation(s)
Engine Control Module, CM850

Issued to

Cummins Marine
CHARLESTON SC, United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**Application :****Location classes:****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

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

This Certificate is valid until **2017-06-30**.Issued at **Høvik** on **2015-07-24**DNV GL local station: **New York**Approval Engineer: **Sergey Gilmiyarov**for **DNV GL**-----
Odd Magne Nesvåg
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.

Job Id: **262.1-000506-5**
Certificate No: **TAA0000028**

Place of manufacture

Continental Automotive Systems, Seguin, TX, USA

Product description

Engine Fuel Injection Control System, Model CM850, consisting of:

Description / Type	Part Number
Base engine components	
Electronic Control module, CM850 A26 ECM	4921776
Crank Position Hall Effect Sensor	2872277
Cam Position Hall Effect Sensor	2872279
Intake Manifold Temperature Sensor	4088832
Intake Manifold Pressure Sensor	2872254
Accumulator Pressure Sensor	4964102
Engine Protection Components	
Oil Pressure Sensor	3408602
Fuel Supply Temperature Sensor	4954905
Coolant Temperature Sensor	3865312
Ambient Air Pressure Sensor	4076493
Coolant Level Sensor	2872769
Other/Base Engine Components Specific to Marine	
Fuel Supply Pressure Sensor	3408562
Crankcase (Blowby) Pressure Sensor	4954405
Exhaust Stack Temperature Sensor	4928636
Gear Oil Pressure Sensor	3408570

SW version numbers for the electronic control module CM850 A26 ECM: **19.00.xx.xx**

Application/Limitation

1. This system is only to be used as engine control and safety system for multi engine propulsion plants, auxiliary and emergency duties.
2. An external safety system shall be installed in addition to this control system.

Approval conditions

The Type Approval covers hardware and software listed under Product description. When the hardware is used in applications to be classed by DNV, the following documentation of the actual application 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

Product certificate

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 A 202 **will not be** required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

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.

Job Id: **262.1-000506-5**
Certificate No: **TAA0000028**

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE