



Certificate No.

03-001759/031457

## TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

**Electronic Engine Control and Monitoring System  
for Caterpillar Engines**

**ADEM IV (A4:E4v3.1)**

MANUFACTURER:

**CATERPILLAR Inc.**  
3701 South Street  
Lafayette, Indiana 47905-4856  
UNITED STATES OF AMERICA

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

**Croatian Register of Shipping: Rules for the classification of ships,  
Part 9. – Machinery, Part 13. – Automation**

**IACS UR E10**

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2024-10-06**

Place and date: Split, 2020-07-23

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

**DETAILED PRODUCT DESCRIPTION:**

<b>ADEM IV – Engine Control and Monitoring System A4:E4v3</b>	<b>Caterpillar engines</b>
System level schematics (with sensors and I/O)	263-6560_1; 263-6560_2
Control Gp. – ADEM IV	488-4881; 488-4884
Air Cooled ECM Assembly Drawing	28066632
Air Cooled Housing	28017914
Schematic	28054599 (base); 28066663 (chart)
Schematic – Power Supply	28037326 (base); 28037327 (chart)
Board Assembly	28066663 (chart)
Board Assembly – Power Supply	28037327 (chart)
Associated Sensors/Components (Governing function only)	
Camshaft Speed Timing	191-8305
Compressor Inlet Air Pressure	296-5220
Air Inlet Manifold Pressure	296-5221
Air Inlet Manifold Temperature	288-3783
HPCR Rail Pressure	296-5223
Thermowell	263-6541
Pressure Port	263-6568
ECM Software Version	A4E4v3.1 December 2006
ECM Suffix Code	MC

**APPLICATION / LIMITATIONS:**

*Correct configuration and set up for each delivery to be tested during commissioning, after installation, under the supervision of a Society Surveyor. Major changes in the software are to be approved before being installed.  
Approval also valid for ships to be granted with class notations: AUT 1, AUT 2 and AUT 3.*

**TYPE APPROVAL DOCUMENTATION:**

- ADEM IV – (A4:E4v3) Electronic Control Module - Product Information Sheet,
- EC-29 Marine Society Test Plan for ADEM IV, Ver. 1.1- September 01,2006,
- Environmental Test Reports – Elite 37999-01,03,05,07,09,11,13,17,20,
- EMC Test Report – Elite 37724-02, March 26 – April 06, 2007,
- Performance Test Report with C175 - April 02-03, 2007,
- Witness Test Sign-off Sheets, April 04-06, 2007,
- Caterpillar A4E4v3.1 Prod IV to Prod V Whitepaper – Ver. 1.2, dated 12-Oct-2012,
- ELITE Engineering Test Reports No. 1302487-01 Rev.A & No. 1302489-01,
- A4:E4v2/A4:E4v3.1/A5:E4v2 RoHS Update White Paper, Version 1.0, dated 17 March 2016,
- A4:E4v2 RoHS Update Type Approval Test, Version 1.00, dated 16 March 2016,
- Electronics & Systems Integration (E&SI) – ECM RoHS and Obsolescence, Table Top Revie 7/16/15,
- Elite Electronic Engineering Inc. – Engineering Test Report 1504199-01 Rev. A, dated 07 March 2016.

**MARKING OF PRODUCT:**

*In accordance with IEC60945 – Marking and identification ( The Manufacturer and Type Designation of the product, serial number, date of manufacture, safe distance to magnetic compass-if app., supply voltage, software version...).*

**CONDITIONS FOR CERTIFICATION:**

*All changes in components and software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to CRS for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.*