



Certificate No.

03-001757/031457

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:E4v2)

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:

ADEM IV – Engine Control and Monitoring System A4:E4v2	Caterpillar engines
System level schematics (with sensors and I/O)	256-7835; 243-0451; TBD
Control Gp. – A4E4v2.	478-7926
Air Cooled ECM Assembly Drawing	28306868
Air Cooled Housing	28285842
Schematic	28018074
Schematic – Power Supply	28018081
Board Assembly	28037265
Board Assembly – Power Supply	28306871
Associated Sensors/Components (Governing function only)	
Primary Speed Timing	109-7194; 201-6616; 245-4630; 338-0839
Secondary Speed Timing	109-7195; 201-6615; 245-4630; 338-0840
Engine Oil Pressure	194-6725; 161-1705
Boost Pressure/Inlet Air Pressure	218-3840; 161-1704
Exhaust Temperature Sensor	163-7882
Other Temperature sensors: Coolant Temperature, Fuel Temperature, Intake Air Temperature	130-9811
ECM Software Version	A4E4v2 (Version 2), June 2005
ECM Suffix Code	JV
Fuel Pressure sensors	338-0842; 338-0843

APPLICATION / LIMITATIONS:

Correct configuration and set up for each delivery to be tested during commissioning, after installation, under the supervision of a Society Surveyor.

Approval also valid for ships to be granted with class notations: AUT 1, AUT 2 and AUT 3.

TYPE APPROVAL DOCUMENTATION:

- ADEM IV – A4:E4v2 Electronic Control Module - Product Information Sheet
- EC-29 Marine Society Test Plan for ADEM IV, Ver. 1.1, September 27, 2005.
- EC-29 Marine Society Testing Procedure For A4E4v2 System, Ver. 1.1, September 30, 2005.
- EMC Test Report of the A4E4v2 Marine Engine Controller (1083), October 04, 2005.
- IP Enclosure Test Reports 33260-1/33260-2, September 27-28, 2005.
- Functional Test Report, C32 ACERT, September 28, 2005.
- Witness Test Summary Report, Ver1.0, October 24, 2005.
- Part Number Changes made in accordance with “ADEM IV White Paper” Version 1.0 dated 2012-02-14,
- 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 Review //16/15,
- Elite Electronic Engineering Inc. – Engineering Test Report No. 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.