Certificate No: **2609141530168034**
TL Project No: **25-4837**

TYPE APPROVAL CERTIFICATE

This is to certify that the

Safety Control and Engine Management System

Manufacturer : **AB VOLVO PENTA**

Address : **Gropegårdsgatan 11, SE-405 08 Gothenburg, Sweden**

Product Type : **EMS**

Reference Rule : **TL Rules, Part B, Chapter 4-1, Automation, 01.01.2022**
TL Rules, Part E, Chapter 104 - Naval Ship Technology, Propulsion Plants, 01.01.2022
TL Rules, Part E, Chapter 105 - Naval Ship Technology, Electrical Installations, 01.01.2022
TL Rules, Part E, Chapter 106 - Naval Ship Technology, Automation, 01.01.2022
TL Rules, Part B, Chapter 5, Electric , 01.01.2024
TL Rules, Part B, Chapter 4 - Machinery, 01.07.2025
IACS UR E10 Rev.10 Test Specification for Type Approval , 01.08.2024

Subject to the conditions referred to in the following pages, this certificate is valid until **21.09.2031**
Surveyor: **İbrahim Evren DAL**

Issued at **İstanbul** on **22.09.2026**

This document is electronically signed and does not require a manual signature

Click here for the verification website

Emrah SÖĞÜTÇÜ
New Building Division Manager
TÜRK LOYDU

Expire Date of Previous Certificate: -

For Information Only

This certificate is subject to terms and conditions described below:
Any significant change in design or construction may render this Certificate invalid. Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and relevant international instruments that apply to it.

Product	**: Safety Control and Engine Management System**
Type of Product	**: EMS**
Product Description	**: The basic system architecture comprises an Engine Management System (EMS 2. 4) which is engine mounted and used to manage all engine parameters such as engine speed and control of electronic fuel injectors.** **This control and monitoring system is for all Volvo Penta marine engines with particular designations D8, D13 & D16 of the same range fitted on ACCU vessels either as main propulsion or auxiliary power plant.** **A Marine Commercial Control (MCC) system consisting of Marine Control Unit (MCU) for control and monitoring of engine running status, relevant gauging and signal converting of analogue/binary inputs/outputs, and switches; Remote Panel (RP) for remote control and monitoring of MCU functions.** **Engine shutdown is supervised by an independent solid state Shut Down Module (SDM). Engine slowdown is supervised by the engine management system (EMS) for propulsion applications. (Slowdown not applicable for genset applications).** **An Aftertreatment Control Module is added in the SCR. The ACM controls the urea injection systems and monitors the SCR parameters as well as managing alarms related to the SCR.**
Approval No / Date	**: PAE-EPAS/023413/25-4837/MY , 26.12.2025** **PAE-EPAS/023414/25-4837/MY , 26.12.2025** **PAE-EPAS/024064/25-4837/MY , 26.02.2026** **PAE-EPAS/024823/25-4837/MY , 14.05.2026**
Ingress protection (IP) rating	**: IP67**
Documentation	**: - Environmental test report, report date: 04.03.2019, issued by: RISE Research Institutes of Sweden AB** **- Salt mist test report, report date: 25.02.2019, issued by: RISE Research Institutes of Sweden AB** **- EMC test report, report date:12.02.2024, issued by: RISE Research Institutes of Sweden AB** **- Test report EMS for D16 engine, report date: 14.09.2026, issued by: Volvo Penta AB**
Performed Tests	**: Quality Audit** **Control according to approved documentations** **Visual inspection** **Performance test** **Review of environmental test reports** **- Vibration test** **- High voltage test** **- Insulation measurement test** **- Damp and Dry heat test** **- Shock resistance test** **- Cold test** **- IP Degree test** **- Salt mist test** **Review of EMC/EMI test reports** **- Conducted emission** **- Radiated emission** **- Electrostatic discharge immunity** **- Radiated Electromagnetic Field Immunity** **- Conducted fast Transients Immunity** **- Conducted slow Transients Immunity**

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- Conducted high Frequency Immunity
- Conducted low Frequency Immunity

Test Place **: AB VOLVO PENTA, Vara/SWEDEN**

Last Inspection Date **: 14.09.2026**

Others **:**

System Components Identification-Hardware and software part number

Module	*System/Component*	*System*	*HW*	*SW*	*Application*
EMS 2.4	*Engine Management System 2.4*	*D8*	*24400064*	*24387656*	*(Prop MP) (Prop MH) (Prop IPS) (Aux/EM)*
EMS 2.4	*Engine Management System 2.4*	*D13*	*24400058*	*24387647 IMO II 24732978 IMO III*	*(Prop MP) (Prop MH) (Prop IPS) (Aux/EM)*
EMS 2.4	*Engine Management System 2.4*	*D16*	*24400058*	*24387647*	*(Prop MP) (Prop MH) (Aux/EM)*
	Control Modules				
SDM	*Shut Down Module*		*24400060*	*24836851*	
ACM	*Aftertreatment Control Module*		*23252913*	*23340645 24910456 (D13)*	
	Marine Comercial Control				
MCU	*Marine Control Unit*	*MCC*	*23226590*	*24070898*	
RP	*Remote Panel*	*MCC*	*24864030*	*24864059*	
COM	*Communication Module*	*MCC*	*23272083*	*N/A*	
RB16 RB8	*Relay Board Relay Board*	*MCC*	*3818362 23009950*	*N/A*	

Application/Limitation **: - This certificate does not cover cybersecurity aspects.**

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Approval Conditions	**: - This certificate is valid for the configuration information provided in the attachment.** **- It can be used together with the test certificate for use on ships.** **- The customer is required to notify TL of any design changes.**

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