

**POTVRDA O TIPNOM ODOBRENJU**
TYPE APPROVAL CERTIFICATEBr / No **03-001631/031354**

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za klasifikaciju brodova, Dio 1. - Opći propisi, Odjeljak 3. - Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenja pod nadzorom Hrvatskog registra brodova.

This is to certify that this product, on the basis of the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.

TIP I OPIS PROIZVODA:

TYPE AND DESCRIPTION OF PRODUCT:

Engine performance monitoring, load balancing and timing adjustment**PMI Online**PROIZVOĐAČ:
MANUFACTURER:**MAN Diesel & Turbo**
Teglhølmegade 41
DK-2450 COPENHAGEN SV
DENMARK**PROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:**

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

Hrvatski registar brodova: **Pravila za klasifikaciju brodova,**
Dio 9. – Strojevi, Dio 13. – Automatizacija
Croatian Register of Shipping: *Rules for the classification of ships,*
Part 9. – Machinery, Part 13. – Automation

IACS UR E10**DETALJI O PROIZVODU I UVJETIMA CERTIFIKACIJE DANI SU NA POLEĐINI.**

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

ODOBRENJE VRIJEDI DO: **2022-05-27**
APPROVAL IS VALID UNTIL:Mjesto i datum **Split, 2018-05-28**
Place and dateM.P. _____
(Seal)

Marinko Popović, dipl.ing.

Napomena: Ova potvrda nije valjana ako se proizvod ili način njegove proizvodnje promijenio u odnosu na tipno ispitani proizvod. Proizvođač treba obavijestiti Hrvatski registar brodova o bilo kojoj izmjeni na proizvodu kako bi ishodio valjanu potvrdu.

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.

PODROBNIJI OPIS PROIZVODA:*DETAIL PRODUCT DESCRIPTION:*

Data Acquisition jedinica (DAU) - PMI Online je jedinica koja kontinuirano prikuplja PMI podatke motora. DAU je u osnovi 14+3 kanalni Ethernet uređaj frekvencije 200kHz koji kontinuirano prikuplja uzorke te izvodi proračune te pruža višestruke ulazno/izlazne podatke.

Osjetnici pritiska nalaze se na svakom cilindru a kontroler izvodi kontinuiranu provjeru pritiska i na osnovu toga omogućava podesavanje performanci motora (podesavanje opterećenja i točke ubrizgavanja goriva) ukoliko je to potrebno.

The Data Acquisition Unit (DAU) — PMI Online is a new data acquisition unit for the PMI data monitoring.

The DAU is basically an Ethernet-based 14+3 — channel 200 kHz analogue sampling system with adequate calculating power and multiple digital I/O's.

Pressure sensors are fixed on all cylinders and a controller, which continuously monitor the pressure providing possibility to adjust the engine performance (load balancing and timing) when needed.

TEHNIČKA DOKUMENTACIJA / NACRTI:*TECHNICAL DOCUMENTATION / DRAWINGS:*

Data Acquisition Unit DAU-10, MDT no. 1881806-2,

Data Acquisition Unit DAU-11, MDT no. 1882350-0,

Data Acquisition Unit DAU-12, MDT no. 1883855-1.

PODRUČJE PRIMJENE / POSEBNI I GRANIČNI UVJETI:*APPLICATIONS / LIMITATIONS:*

PMI Online can be applied to all ME & ME-B Engine Control Systems of the following engines:

K/L/S 50-60-65-70-80-90-98 ME-C

DOKUMENTACIJA ZA TIPNO ODOBRENJE:*TYPE APPROVAL DOCUMENTATION:*

SP Technical Research Institute of Sweden A/S – Type approval testing - 0541 IO Board, P17-0037 dated 2017-06-27,

SP Technical Research Institute of Sweden A/S – Type approval testing - 0342 CPU Board, 5P05971 dated 2016-02-24,

SP Technical Research Institute of Sweden A/S – Type approval testing - Data Acquisition & Supervision unit, 3P02146 dated 2013-07-08.

OZNAČAVANJE PROIZVODA:*MARKING OF PRODUCT:*

Sukladno zahtjevima IEC60945 - Oznacavanje i identifikacija (ime proizvođača i tip proizvoda, serijski broj, datum proizvodnje, napon napajanja, programska verzija).

In accordance with IEC60945 — Marking and identification (The Manufacturer and Type Designation of the product, serial number, date of manufacture, supply voltage, software version).

UVJETI ZA CERTIFIKACIJU:*CONDITIONS OF CERTIFICATION:*

Bitne izmjene u hardveru i softveru moraju se odobriti prije instalacije na brod.

Sve hardverske i softverske promjene sustava moraju biti zapisane tijekom primjene na brodu.

Zapisi o izmjenama moraju se dostaviti HRB-u radi provjere i odobrenja.

Major changes in the hardware and software are to be approved before being installed on the vessel.

All changes in hardware or 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.