



POTVRDA O TIPNOM ODOBRENJU
TYPE APPROVAL CERTIFICATE

Br / No 03-001474/031190

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:

SUSTAV UPRAVLJANJA STROJEM S DVOJNIM GORIVOM
DUAL FUEL ENGINE CONTROL SYSTEM

MAN B&W ME-GI ECS – sw 1502

PROIZVOĐAČ:
MANUFACTURER:

MAN Diesel & Turbo
Tegholmmsgade 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: 2019-09-24
APPROVAL IS VALID UNTIL:

Mjesto i datum Split, 2015-09-24
Place and date

M.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:**

ME GI-ECS je sustav upravljanja za MAN B&W dvotaktne motore s dvojnim gorivom. Pored osnovnog ME-ECS sustava sastoji se i od više upravljačkih modula u funkciji GI-ECS-a:

ME GI-ECS is Control System for MAN B&W 2-stroke dual fuel engines. On top of the main ME-ECS system, it consists also of several additional control modules in GI-ECS function:

ME – ECS

MOP – Main Operating Panel (engine control room)

LOP – Local Operation Panel (engine side)

ECU – Engine Control Unit

EICU – Engine Interface Control Unit

ACU – Auxiliary Control Unit

CCU – Cylinder Control Unit

SCU – Scavenging Air Control Unit

MCU – Master Control Unit

BCU – Backup Control unit

MPC – Multipurpose Controller

HCU – Hydraulic Cylinder Unit

ELFI – Electronic Fuel Injection

ELVA – Exhaust Valve Activation

ALS – Alpha Lubricator System

CPS – Crankshaft Position Sensors

The hardware listed above is to be built with ECS for ME (TAC 03-001360/031025), ME-B (TAC 03-001367/031041) and ME-GI (TAC 03-001430/031118).

GI – ECS

Control Units:

GMOP Gas Main Operation Panel

GPCU Gas Plant Control Unit

GECU Gas Engine Control Unit

GCCU Gas Cylinder Control Unit

Safety Units:

GPSU Gas Plant Safety Unit

GCSU Gas Cylinder Safety Unit

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

This certificate is based on the information given at the Type Approval Test in Copenhagen (2015/05/05-06) and S. Korea (2012), and information provided in General System Information 3099296-9 and 3099295-7.

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

Sustav je primjenjiv samo na MAN B&W dvotaktne ME i ME/B motore s dvojnim gorivom. Zajedno s dodatnim mehaničkim komponentama za plin, sustav upravlja brzinom, alarmima i zaštitom motora.

The control system is applicable for the MAN B&W ME and ME/B type of two-stroke dual fuel engines only. Together with additional mechanical components, system contain speed governing, engine alarm and safety functions.

DOKUMENTACIJA ZA TIPNO ODOBRENJE:**TYPE APPROVAL DOCUMENTATION:**

3090685-1 v.3.0: Results of the Type Approval Test of Software MAN B&W ME Engine Control System,

3093265-0 v.2.3: Results of the Type Approval Test of Software MAN B&W MEGI Engine Control System,

The entire list of electronic components for ECS 3093398-0 is reviewed by CRS. New components are added and approved up to including Rev.5 dated 2015-08-25 based on submitted relevant Environmental Test reports.

OZNAČAVANJE PROIZVODA:**MARKING OF PRODUCT:**

Ime proizvođača, tip proizvoda, serijski broj-identifikacija, datum proizvodnje, napon napajanja i programska izvedba.

The Manufacturer and Type Designation of the product, serial number, date of manufacture, supply voltage and software version.

UVJETI ZA CERTIFIKACIJU:**CONDITIONS OF CERTIFICATION:**

Za svaku primjenu na brodovima klase HRB-a, potrebno je dostaviti kompletnu tehničku dokumentaciju s nacrtima na pregled i odobrenje prije postavljanja na brod. Značajnije izmjene u software-u moraju biti odobrene prije primjene na brodu.

Pojedinačni prihvata motora obvezno mora uključiti provjeru funkcionalnosti ME GI-ECS sustava upravljanja.

For each application on board CRS classed vessels complete technical documentation and drawings shall be submitted for examination and approval prior installation on board. Major changes in the software are to be approved before on board application.

Each engine FAT test must include ME GI-ECS Integration Test with particular engine.

Raščlana

Zamjenjuje potvrdu

13.01.01

03-001462/031118