


**POTVRDA O TIPNOM ODOBRENJU**  
**TYPE APPROVAL CERTIFICATE**

Br /No	03-001476/031183
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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:

**TROFAZNI ASINKRONI KAVEZNI MOTORI BRODSKE ZATVORENE IZVEDBE**  
**SHIP'S USE THREE-PHASE ASYNCHRONOUS CAGE MOTORS CLOSED CONSTRUCTION**
**5.xABZ 63-160****PROIZVOĐAČ:**

MANUFACTURER:

**KONČAR-MES d.d.**

Fallerovo šetalište 22

10000 ZAGREB • HRVATSKA - CROATIA

**PROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:**

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

**RULES FOR THE CLASSIFICATION OF SHIPS: PART 12- ELECTRICAL EQUIPMENT**

IEC 60034-1	Electrical rotating machines, rating and general requests
IEC 60034-2	Methods for determination of losses and utilities
IEC 60034-5	Degrees of protection of electrical rotating machines
IEC 60034-6	Cooling methods of electrical rotating machines
IEC 60034-7	Mounting arrangements and assembly layouts
IEC 60034-8	Terminal markings and direction of rotation
IEC 60034-9	Noise limits
IEC 60034-11	Thermal protection
IEC 60034-14	Mechanical vibrations in machines of frame sizes $\geq 56$
IEC 60034-18-1	Insulation systems
IEC 60038	IEC standard voltages
IEC 60072	Mounting dimensions in relation to ratings of electrical rotating machines of frame sizes 56 to 400
IEC 60085	Thermal evaluation and classification of insulation systems

**DETALJI O PROIZVODU I UVJETIMA CERTIFIKACIJE DANI SU NA POLEDINI.**

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

**ODOBRENJE VRIJEDI DO: 2019-09-29**

APPROVAL IS VALID UNTIL:

**Mjesto i datum: Split, 2015-10-06**

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.

**PODROBNJI OPIS PROIZVODA:**  
**DETAILED PRODUCT DESCRIPTION:**

- 3 fazni kavezni indukcionni brodski motori/ 3 phase cage Induction MARINE motors – totally enclosed
- Materijal kućišta: tlačno lijevana aluminijska slitina/ Frame material: Die cast alloy aluminium frame
- Tip 5.x ABZ 63 do 5.x ABZ 160/ Type 5.x ABZ 63 to 5.x ABZ 160
- Hlađenje: zrak – metoda hlađenja IC411/ Cooling: Air – Cooling method IC 411
- Rotor: kratkospojni/ Rotor: Squirrel cage
- Napajanje – nazivni napon: 220 do 690 V/ Power supply – Rated voltage: 220 to 690 V
- Frekvencije: 50 Hz i 60 Hz/ Frequency: 50 Hz and 60 Hz
- Sinkrona brzina: 750 do 3600 RPM/ Synchronous speed: 750 to 3600 RPM
- Broj polova: 2 do 8/ Number of poles: 2 to 8
- Tip službe S1 do S10 u skladu s IEC normom/ Duty type S1 to S10 according to IEC standard
- Klasa izolacije: F/ Insulation class: F
- Temperaturna klasa: B ili F/ Temperature rise class: B or F
- Temperatura okoline: -30°C do +50°C/ Ambient temperature: -30°C to +50°C
- Nazivna snaga za S1 službu: 0,06 kW do 25 kW/ Rated power at S1 duty: 0,06 kW to 25 kW
- Stupanj mehaničke zaštite: IP55 – IP65-IP56-IP66/ Degree of protection: IP55 – IP65 – IP56 – IP66

**PODRUČJE PRIMJENE / POSEBNI GRANIČNI UVJETI:**  
**APPLICATION / LIMITATIONS:**

**Motori su namijenjeni za ugradnju na brodove u skladu s HRB Pravilima za klasifikaciju brodova.**  
*The motors intended for ship's use according to CRS Rules for Classification of Ships.*

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

**A44690, A44690/I, A44689/4, A44620, A44689/3, A44689/B1, A44689/B2, A44689/B3,  
 A44689/B4, A44689/B5, A44689/B6, A44689/B7, A50887, A50888, A50889, A51238, A50890, A50891**

**Technical description A44689/C-Annex 3, issue 9/2015, A44689/C1, A44689/C2, A44689/C5, A44689/C6,  
 A44689/CZ**

**OZNAČAVANJE PROIZVODA:**  
**MARKING OF PRODUCT:**

**Ova potvrda vrijedi za veličine 63, 71, 80, 90, 100, 112, 132 i 160 za slijedeće izvedenice osnovne serije:  
 5.xABZ, 5.xABZA, 5.xABZP, 5.xABZPA, 5.ABZK, 5.xABZKA, 5.xABZPK i 5.xABZPKA (x – 0,1,2,3,4 ili  
 5- oznaka izvedbe kućišta).**

*This Certificate covers sizes 63, 71, 80, 90, 100, 112, 132 and 160 for following derivatives of the basic series:  
 5.xABZ, 5.xABZA, 5.xABZP, 5.xABZPA, 5.ABZK, 5.xABZKA, 5.xABZPK and 5.xABZPKA (x – 0,1,2,3,4 or 5- sign  
 of casing design).*

**UVJETI ZA CERTIFIKACIJU:**  
**CONDITIONS FOR CERTIFICATION:**

**Za el. strojeve bitnih službi mora se izvršiti pojedinačno ispitivanje u skladu s radnim uputama HRB  
 QW-48.**

*For el. machines intended for essential services shall be carried out routine test according to CRS working  
 instruction QW-48.*

Rašćelana

12.01.02

Zamjenjuje potvrdu

03-001467/031183