



Marine & Offshore
Division

Certificate number: 23359/B0 BV

File number: ACE 4/400/12

Product code: 2584I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

KONCAR-MES d.d.

Zagreb - CROATIA

for the type of product

ASYNCHRONOUS MACHINES (Power 100kW and over)

Marine Flameproof Motors, type: 7ABT 280 to 315.

Requirements:

BV Rules for the Classification of Steel Ships,

IEC 60034 series (2010), IEC 60079-0 (2013), IEC 60079-1 (2014), IEC 60079-7 (2007), IEC 60079-31 (2014).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 20 Mar 2022

For BUREAU VERITAS,

At BV RIJEKA, on 20 Mar 2017,

Slaven Celic



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

3-phase cage induction MARINE motors

Series 7ABT

Totally enclosed

Type of protection:

Ex d IIC (motor and terminal box "d" or motor "d" with permanently connected cables)

Ex de IIC (motor "d" and terminal box "e")

Ex de I (motor "d" and terminal box "e")

Ex d I (motor "d" with permanently connected cables)

| | |
|------------------------------------|--|
| Frame material | Cast iron |
| Number of poles | 2 to 8 |
| Shaft height motors: | from 280 to 315 mm |
| Cooling | Air –Cooling method IC 411 - IC 410 and IC 416 |
| Degree of protection of enclosures | IP 54 - IP 55 - IP 56 and IP 66 |
| Rotor | squirrel cage |
| Power supply | 220 to 690 V |
| Frequency | 50 Hz and 60 Hz |
| Speed | 750 to 3600 RPM |
| Insulation class | F -H |
| Temperature rise class | B |
| Duty service | S1 to S10 according to IEC standard |
| Ambient temperature | - 20°C to 60°C |
| Rated power at S1 duty* | |

1.1 - Approval range:

| Motor type | kW 2 poles 50 Hz | kW 2 poles 60 Hz | kW 4 poles 50 Hz | kW 4 poles 60 Hz | kW 6 poles 50 Hz | kW 6 poles 60 Hz | kW 8 poles 50 Hz | kW 8 poles 60 Hz |
|------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 7ABT 280M | / | 105 | / | 103 | / | / | / | / |
| 7ABT 315S | 110 | 124 | 110 | 124 | / | / | / | / |
| 7ABT 315M | 132 | 149 | 132 | 149 | / | 100 | / | / |
| 7ABT 315LA | 160 | 180 | 160 | 180 | 110 | 124 | / | 102 |

* The power indicated in this table can be modified according to ambient temperature, duty type and other factors as per customer request

2. DOCUMENTS AND DRAWINGS:

Technical description as per KONCAR-MES documentation N° A524200 Annex 3 dated 24/02/2008

Schematic overview: A51420/12E

Assembly drawing: A51420/A + A69946/E + A69946/1E + A69946/2E

Assembly drawing of electric motors in Ex protection type “explosion-proof enclosure d”: A52420/E

Connection complete for motors in Ex protection type “explosion-proof enclosure d”: A52421/E

Terminal plate: A51420/2E – A51420/3E

Terminal box (7ABT 132 to 250 EExd IIC): A51420/4E and A51420/5E

Terminal box (7ABT 132 to 280 EExd IIC): A51420/4E and A51420/5Exd

Terminal box (7ABT 132 to 250 EExde IIC): A51420/4E and A51420/6E

Thermal protection drawing: A61903/E

Protective gaps: A51420/1E

Bushing isolator: A61926E

Connection parts in the terminal box: A56432E

Forced ventilation unit: A54343E

For B0 version:

Technical description N°A524200, dated 31.Mar.2016.

3. TEST REPORTS:

Type tests carried out according to BV Rules Pt C, Ch 2, Sec 4, Table 1

Review of type tests reports N° 1146939

CESI certificate N° CESI 03 ATEX 280X, CESI extension N° 02/06 dated 14/06/2006 to CESI 03 ATEX 280X and CESI

extension N° 03/08 dated 09/09/2008 to CESI 03 ATEX 280X and CESI extension N° 04/10 dated 09/04/2010 to CESI 03

ATEX 280X

For B0 version:**CESI:**

- Examination certificate No. CESI 05 ATEX 110 X /05, dated 27.May.2016.
- Examination certificate No. CESI 03 ATEX 280 X /08, dated 27.May.2016.

4. APPLICATION / LIMITATION:

4.1 - Application / Limitation of use

According to BV Rules for the Classification of Steel Ships and IEC 60092 series

4.2 - On board installation & Maintenance requirements

According to BV Rules for the Classification of Steel Ships and IEC 60092 series

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **KONCAR-MES d.d.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

6. MARKING OF PRODUCT:

6.1 - Name plate according to IEC 60034-1

6.2 - Stamp @ on frame when BV Mode I survey

6.3 - Stamp \ on frame when individual inspection

I M2 Exdb I Mb or Im2 Ex db e 1Mb

II 2G Ex db IIB T3 Gb or II 2G db e IIB T3 Gb

II 2G Ex db IIC T4, T3 Gb or II 2G Ex db e IIC T4, T3 Gb

II 2D Ex tb IIIC T130°C, T160°C Db IP6X

7. OTHERS:

7.1 - It is **KONCAR-MES d.d.** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate n° 23359/A0 BV issue on 11.May.2011. by the society.

*** END OF CERTIFICATE ***