



Marine & Offshore
Division

Certificate number: 22354/B2 BV

File number: ACE 04/853/02

Product code: 25841

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

Svend Hoyer A/S

Hadsten - DENMARK

for the type of product

ASYNCHRONOUS MACHINES (Power 100kW and over)

Y2E2, HMC2 & HMC3 series.

Cage Induction Marine Motors.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships and Offshore Units.
IEC 60034 series (2010).

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: 22 Dec 2019

For BUREAU VERITAS,

At BV FREDERICIA, on 13 Feb 2017,

Jesper Jensen



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 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The Y2E2, HMC2 & HMC3 series are motors for Marine and Offshore applications.

1.1 - Specifications:

Number of poles:	2, 4, 6, 2/4, 4/6, 4/8, 8
Power supply:	230 to 690 V 50 Hz – 60 Hz
Enclosure en cooling:	IP 55 or IP 56 - IC 411
Ambient temperature:	45°C
Duty type:	S1 to S9
Insulation class:	F or H
Temperature rise:	B or F

1.1.1 - Rated power at S1:

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
Y2E2								
280 M	/	104,8	/	104,8	/	/	/	/
280 M1	106,7	128,0	/	/	/	/	/	/
280 MB	/	/	106,7	128,0	/	/	/	/
280 MD	/	/	90	105	/	/	/	/
280 MC	/	/	110	132	/	/	/	/
315 S	106,7	128,0	106,7	128,0	/	/	/	/
315 M	128,0	153,6	128,0	153,6	/	104,8	/	/
315 L1	155,2	186,2	155,2	186,2	106,7	128,0	/	104,8
315 L2	194,0	232,8	194,0	232,8	128,0	153,6	106,7	128,0
315 Ly	/	/	242,5	291,0	/	/	/	/
355 M	242,5	291,0	242,5	291,0	/	/	/	/
355M1	/	/	/	/	155,2	186,2	128,0	153,6
355 M2	/	/	/	/	194,0	232,8	155,2	186,2
355 L	305,6	366,7	305,6	366,7	242,5	291,0	194,0	232,8
355 LB	/	/	344,4	412,3	/	/	/	/
400 M1	344,4	413,2	388,0	465,6	305,6	366,7	242,5	291,0
400 M2	388,0	465,6	436,5	523,8	344,2	413,2	271,6	325,9
400 M3	436,5	523,8	/	/	/	/	/	/
400 L	/	/	/	/	388,0	465,6	/	/
400 L1	485,0	582,0	485,0	582,0	/	/	305,6	366,7
400 L2	543,2	651,8	543,2	651,8	/	/	344,4	413,2
400 L3	/	/	611,0	733,0	/	/	388,0	465,0

Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +- 20 %. Motors used for short time duty (S2, S3, S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders.

1.2 - Three phase Cage Induction Marine Motors - IE2 Type HMC2:**1.2.1 - Rated power at S1:**

Motor type HMC2	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
280 M	/	105	/	105	/	/	/	/
280 MB	/	/	107	128	/	/	/	/
315 S	107	128	107	128	/	/	/	/
315 M	128	154	128	154	/	105	/	/
315 L1	155	186	155	186	107	128	/	105
315 L2	194,0	233	194	233	128	154	107	128
355 M	243	291	243	291	/	/	/	/
355M1	/	/	/	/	155	186	128	153
355 M2	/	/	/	/	194	233	155	186
355 L	306	367	306	367	243	291	194	233
355 LB	/	/	344	412	/	/	/	/
400 M	388	466	/	/	/	/	/	/
400 M1	/	/	388	466	306	367	243	291
400 M2	/	/	437	524	344	413	272	326
400 L	/	/	/	/	388	466	/	/
400 L1	/	/	485	582	/	/	306	367
400 L2	/	/	543	652	/	/	344	413
400 L3	/	/	611	733	/	/	388	485

Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +/- 20 %. Motors used for short time duty (S2, S3, S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders.

1.3 - Three phase Cage Induction Marine Motors - Type HMC3:**1.3.1 - Rated power at S1:**

Motor type HMC3	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
HMC3 280M	90	108	90	108	55	66
HMC3 280MB	/	/	107	128	/	/
HMC3 315S	110	132	110	132	75	90
HMC3 315M	132	158	132	158	90	108
HMC3 315L1	160	192	160	192	110	132
HMC3 315L2	200	240	200	240	132	158
HMC3 355M	250	300	250	300	/	/
HMC3 355M1	/	/	/	/	160	192
HMC3 355M2	/	/	/	/	200	240
HMC3 355L	/	/	315	378	250	300
HMC3 355L1	315	378	/	/	/	/
HMC3 355L2	/	/	355	426	/	/

Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +/- 20 %. Motors used for short time duty (S2, S3, S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders

2. DOCUMENTS AND DRAWINGS:

Drawings / Technical data:

As per Hoyer motors catalogue Ver.3 2008 (EFF2), catalogue 2011 (IE2) and HMC2 IE2 Motor list Feb 2012
HMC2-250-4,6p-B5

For B2 version:

Drawing ref. 90090, dated 10.Sep.2014.

Drawing ref. 90176, dated 25.Sep.2014.

3. TEST REPORTS:

3.1 - Electrical tests:

Y2E2 280M-2, Y2E2 280M1-2, Y2E2 280MB-4, Y2E2 315L-6, Y2E2 315M-2, Y2E2 315M-4, Y2E2 315L1-2, Y2E2 315L1-4,
Y2E2 315L3-4, Y2E2 355M2-6, Y2E2 355LB-4, Y2E2 400M1-6, Y2E2 400M1-4.

HMC2-250-4/250-C0440-01

3.2 - Degree of protection

Test report WJ10-290 dated 2010-1-15 and WM09-0193 dated 2007-06-01

For B2 version:**Hoyer motors:**

- Test report ref. HMC3315M4-A, dated 18.Jun.2015.
- Test report ref. HMC3280S6-A, dated 18.Jun.2015.
- Test report ref. HMC3160M22-A, dated 18.Jun.2015.
- Test report ref. HMC3315L12, dated 18.Jun.2015.
- Test report ref. HMC3315L16-A, dated 18.Jun.2015.
- Test report ref. HMC3250M4-A, dated 18.Jun.2015.
- Test report ref. QR/AEC130014A, dated 04.Apr.2014.
- Test report ref. 20140709-0001, dated 04.Dec.2014

4. APPLICATION / LIMITATION:

4.1 - According to BV Rules for the Classification of Steel Ships and Offshore Units.

4.2 - On board installation & maintenance requirements

According to BV Rules for the classification of Steel Ships and Offshore Units.

5. PRODUCTION SURVEY REQUIREMENTS:



5.1 - The above motors are to be supplied by **Svend Hoyer A/S** 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 -  or  conformity marking, as relevant.

7. OTHERS:

7.1 - It is **Svend Hoyer A/S** 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°22354/B1 BV issued on 11.Apr.2016. by Bureau Veritas.

*** END OF CERTIFICATE ***

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