



Marine & Offshore
Division

Certificate number: 38457/A0 BV

File number: ACE 4/877/1

Product code: 2584H

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

NORD Drivesystems KG

Bargteheide - GERMANY

for the type of product

ASYNCHRONOUS MACHINES (Power below 100kW)

Motors of series M7000 and M7010

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60034 series and IEC 60092-301

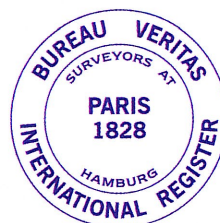
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 22 Jul 2019

For BUREAU VERITAS,

At BV HAMBURG, on 22 Jul 2014,

Adama Diene



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 May 2009

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The M7000 and M7010 series are 3-phase asynchronous motors.

1.1 - Main characteristics:

Number of poles:	4
Rated voltage:	220V to 690V
Rated frequency:	50Hz or 60Hz
Duty type:	S1, S2 ... S9 according to IEC standard
Insulation class:	F or H (for M7000 Standard only)
Temperature rise:	Class F
Ambient temperature:	45°C
Degree of protection:	IP55 or IP66
Housing material:	Aluminium
Fan material:	Aluminium or without fan
Options:	AS66; BRB; BRE; DBR; EKK; ERD; F; FEU; KB; KKV; MOL; MS; NRB 1/2; OKA; OL; OL/H; RD; RDD; RDT; RLS; SH; TF; TRO; TW; WE+HR; WU; Z

1.2 - Types of motor series M7000: (rated power at S1,S9)

Standard

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
63 S/4	0,12	0,14
63 L/4	0,18	0,21
71 S/4	0,25	0,29
71 L/4	0,37	0,43

IE 1

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
80 S/4	0,55	0,63
80 L/4	0,75	0,86
90 S/4	1,1	1,27
90 L/4	1,5	1,73
100 L/4	2,2	2,55
100 LA/4	3	3,45
112 M/4	4	4,6
132 S/4	5,5	6,3
132 M/4	7,5	8,6
132 MA/4	9,2	10,6
160 M/4	11	12,6
160 L/4	15	17,3
180 MX/4	18,5	21,3
180 LX/4	22	25,3
200 LX/4	30	34,5

IE 2

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
80 SH/4	0,55	0,55
80 LH/4	0,75	0,75
90 SH/4	1,1	1,1
90 LH/4	1,5	1,5
100 LH/4	2,2	2,2
100 AH/4	3	3
112 MH/4	4	4
132 SH/4	5,5	5,5
132 MH/4	7,5	7,5
132 LH/4	9,2	9,2
160 SH/4	9,2	9,2
160 MH/4	11	11
160 LH/4	15	15
180 MH/4	18,5	18,5
180 LH/4	22	22
200 XH/4	30	30

IE 3

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
80 LP/4	0,75	0,75
90 SP/4	1,1	1,1
90 LP/4	1,5	1,5
100 LP/4	2,2	2,2
100 AP/4	3	3
112 MP/4	4	4
132 SP/4	5,5	5,5
132 MP/4	7,5	7,5
160SP/4	9,2	9,2
160 MP/4	11	11
160 LP/4	15	15
180 MP/4	18,5	18,5
180 LP/4	22	22

1.3 - Types of motor series M7010: (rated power at S1)
unventilated

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
80 LH/4 HM	0,37	0,37
90 SH/4 HM	0,55	0,55
100 SH/4 HM	0,75	0,75
100 LH/4 HM	1,1	1,1

ventilated

Type	Power [kW] at 50Hz	Power [kW] at 60Hz
80 LH/4 HM L/H	0,75	0,75
90 SH/4 HM L/H	1,1	1,1
100 SH/4 HM L/H	1,5	1,5
100 LH/4 HM L/H	2,2	2,2

2. DOCUMENTS AND DRAWINGS:

Catalogue: 6000602/5013; 6701002/5013;
Precima: M98169 dated 05.06.2013; M98170 dated 05.06.2013;
Ephy Mess: V 140130-LISA-0;
Dandong Keliang Electron Co. ltd: Q/DKL.G-01.03.113-2013

3. TEST REPORTS:

Getriebebau Nord GmbH & Co. KG:

- D-GBN00537 dated 25.02.2014; D-GBN00538 dated 26.02.2014; D-GBN00539 dated 27.02.2014;
- D-GBN00540 dated 26.02.2014; D-GBN00541 dated 27.02.2014; D-GBN00543 dated 04.03.2014

Precima Magnettechnik GmbH:

- Abnahmebericht FDW & FDX dated 13.08.2013

TÜV Nord GmbH:

- 10 204 553873 dated 01.04.2010; 13 993 121357 dated 10.06.2013

AUCOTEAM GmbH:

- 10578/14 dated 10 June 2014

4. APPLICATION/LIMITATION:

4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **Getriebebau Nord GmbH & Co. KG** in compliance with the type described in this certificate.

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

5.3 - **Getriebebau Nord GmbH & Co. KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

Getriebebau Nord GmbH & Co. KG
Getriebebau-Nord-Str. 1
22941 Bargteheide
GERMANY

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- According to IEC 60034 specification

7. OTHERS:

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **Getriebebau Nord GmbH & Co. KG - GERMANY**, will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

*** END OF CERTIFICATE ***