Marine & Offshore Division

Certificate number: 47563/A0 BV
File number: ACE4/890/1
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

ABB sp. z o.o.

Aleksandrow Lodzki - POLAND

for the type of product

ASYNCHRONOUS MACHINES (Power below 100kW)

M2AA63 to M2AA250 and M3AA63 to M3AA280 series.

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships.
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: 21 Mar 2022

For BUREAU VERITAS,
At BV GDANSK, on 21 Mar 2017,
Janusz URBAN

BUREAU VERITAS SURVEYORS AT PARIS 1828 GDANSK INTERNATIONAL REGISTER

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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Totally enclosed squirrel cage three phase low voltage motors for Marine applications.

1.1 - Specifications:

Type	M2AA 63 to M2AA 250 and M3AA 63 to M3AA 280.
Frame material	Aluminium
Ambient temperature	45°C
Shaft height	63, 71, 80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280
Number of poles	2, 4, 6, 8
Synchronous speed	750 to 3600RPM
Rated frequency	50 and 60Hz
Rated voltage	200 to 690V
Degree of protection	IP55 - IP56
Insulation class	F or H
Service duty	S1 to S9

1.2 - Approval range:

1.1.1 - M2AA GP IE2:

Type designation	Output (kW)	Pole
M2AA 63A 2	0.18	2
M2AA 63B 2	0.25	2
M2AA 71A 2	0.37	2
M2AA 71B 2	0.55	2
M2AA 80B 2	0.75	2
M2AA 80C 2	1.1	2
M2AA 90L 2	1.5	2
M2AA 90LB 2	2.2	2
M2AA 100LB 2	3	2
M2AA 63A 4	0.12	4
M2AA 63B 4	0.18	4
M2AA 71A 4	0.25	4
M2AA 71B 4	0.37	4
M2AA 80A 4	0.55	4
M2AA 80E 4	0.75	4
M2AA 90LB 4	1.1	4
M2AA 90LD 4	1.5	4
M2AA 100LC 4	2.2	4
M2AA 100LD 4	3	4
M2AA 63A 6	0.09	6
M2AA 63B 6	0.12	6
M2AA 71A 6	0.18	6
M2AA 71B 6	0.25	6
M2AA 80A 6	0.37	6
M2AA 80B 6	0.55	6
M2AA 90 LB 6	0.75	6
M2AA 90 LD 6	1.1	6
M2AA 100 LC 6	1.5	6
M2AA 112MB 2	4	2
M2AA 132SB 2	5.5	2
M2AA 132SC 2	7.5	2
M2AA 160MLA 2	11	2
M2AA 160MLB 2	15	2
M2AA 160MLC 2	18.5	2
M2AA 180MLA 2	22	2
M2AA 200MLA 2	30	2
M2AA 200MLB 2	37	2
M2AA 225SMA 2	45	2
M2AA 250SMA 2	55	2
M2AA 112MB 4	4	4
M2AA 132M 4	5.5	4

M2AA 132MA 4	7.5	4
M2AA 160MLA 4	11	4
M2AA 160LB 4	15	4
M2AA 180MLA 4	18.5	4
M2AA 180MLB 4	22	4
M2AA 200MLA 4	30	4
M2AA 225SMA 4	37	4
M2AA 225SMB 4	45	4
M2AA 250SMA 4	55	4
M2AA 112MB 6	2.2	6
M2AA 132S 6	3	6
M2AA 132MB 6	4	6
M2AA 132MC 6	5.5	6
M2AA 160MLA 6	7.5	6
M2AA 160MLB 6	11	6
M2AA 180MLA 6	15	6
M2AA 200MLA 6	18.5	6
M2AA 200MLB 6	22	6
M2AA 225SMA 6	30	6
M2AA 250SMA 6	37	6

1.1.2 - M3AA PP IE2:

Type designation	Output	Pole
M3AA 63A 2	0.18	2
M3AA 63B 2	0.25	2
M3AA 71A 2	0.37	2
M3AA 71B 2	0.55	2
M3AA 80B 2	0.75	2
M3AA 80C 2	1.1	2
M3AA 90L 2	1.5	2
M3AA 90LB 2	2.2	2
M3AA 100LB 2	3	2
M3AA 112MB 2	4	2
M3AA 132SB 2	5.5	2
M3AA 132SC 2	7.5	2
M3AA 132SMF 2	11	2
M3AA 132SMG 2	15.0	2
M3AA 132SMJ 2	18.5	2
M3AA 160MLA 2	11.0	2
M3AA 160MLB 2	15.0	2
M3AA 160MLC 2	18.5	2
M3AA 160MLD 2	22.0	2
M3AA 160MLE 2	27.0	2
M3AA 180MLA 2	22.0	2
M3AA 180MLB 2	30	2
M3AA 200MLA 2	30.0	2
M3AA 200MLB 2	37.0	2
M3AA 200MLC 2	45.0	2
M3AA 200MLD 2	55.0	2
M3AA 225SMA 2	45.0	2
M3AA225SMB 2	55.0	2
M3AA 225SMC 2	75.0	2
M3AA 225SMD 2	80.0	2
M3AA 250SMA 2	55.0	2
M3AA 250SMB 2	75.0	2
M3AA 250SMC 2	90.0	2
M3AA 280SMA 2	75.0	2
M3AA 280SMB 2	86.0	2
M3AA 280SMB 2	90.0	2
M3AA 63A 4	0.12	4
M3AA 63B 4	0.18	4
M3AA 63C 4	0.25	4
M3AA 71A 4	0.25	4

M3AA 71B 4	0.37	4
M3AA 71C 4	0.55	4
M3AA 80A 4	0.55	4
M3AA 80A 4	0.75	4
M3AA 80C 4	0.95	4
M3AA 80C 4	1.1	4
M3AA 90LB 4	1.1	4
M3AA 90LD 4	1.5	4
M3AA 90LE 4	1.85	4
M3AA 100LC 4	2.2	4
M3AA 90LF 4	2.2	4
M3AA 100LD 4	3	4
M3AA 100LG 4	3.75	4
M3AA 112MB 4	4.0	4
M3AA 132M 4	5.5	4
M3AA 132MA 4	7.5	4
M3AA 132SMF 4	9.2	4
M3AA 132SMF 4	11.0	4
M3AA 132SMH 4	15.0	4
M3AA 160MLA 4	11.0	4
M3AA 160MLB 4	15.0	4
M3AA 160MLC 4	18.5	4
M3AA 160MLD 4	22.0	4
M3AA 180MLA 4	18.5	4
M3AA 180MLB 4	22.0	4
M3AA 180MLC 4	30.0	4
M3AA 200MLA 4	30.0	4
M3AA 200MLB 4	37.0	4
M3AA 200MLC 4	45.0	4
M3AA 225SMA 4	37.0	4
M3AA 225SMB 4	45.0	4
M3AA 225SMD 4	64.0	4
M3AA 250SMA 4	55.0	4
M3AA 250SMB 4	75.0	4
M3AA 250SMC 4	90.0	4
M3AA 280SMA 4	75.0	4
M3AA 280SMB 4	90.0	4
M3AA 63A 6	0.09	6
M3AA 63B 6	0.12	6
M3AA 71A 6	0.18	6
M3AA 71B 6	0.25	6
M3AA 80A 6	0.37	6
M3AA 80B 6	0.55	6
M3AA 90LB 6	0.75	6
M3AA 90LD 6	1.1	6
M3AA 100LC 6	1.5	6
M3AA 112MB 6	2.2	6
M3AA 132MB 6	4.0	6
M3AA 132MC 6	5.5	6
M3AA 132S 6	3.0	6
M3AA 160MLA 6	7.5	6
M3AA 160MLB 6	11.0	6
M3AA 160MLC 6	15.0	6
M3AA 180MLA 6	15.0	6
M3AA 200MLA 6	18.5	6
M3AA 200MLB 6	22.0	6
M3AA 200MLC 6	30.0	6
M3AA 225SMA 6	30.0	6
M3AA 225SMB 6	37.0	6
M3AA 225SMC 6	45.0	6
M3AA 250SMA 6	37.0	6
M3AA 250SMB 6	45.0	6
M3AA 250SMC 6	45.0	6

M3AA 280SMA 6	45.0	6
M3AA 280SMB 6	55.0	6
M3AA 71A 8	0.09	8
M3AA 71B 8	0.12	8
M3AA 80A 8	0.18	8
M3AA 80B 8	0.25	8
M3AA 90S 8	0.37	8
M3AA 90L 8	0.55	8
M3AA 100LA 8	0.75	8
M3AA 100LB 8	1.1	8
M3AA 100LC 8	1.5	8
M3AA 71C 8	0.18	8
M3AA 80C 8	0.37	8
M3AA 90LB 8	0.75	8
M3AA 112M 8	1.5	8
M3AA 132M 8	3.0	8
M3AA 132MF 8 HO	3.8	8
M3AA 132S 8	2.2	8
M3AA 160MLA 8	4.0	8
M3AA 160MLB 8	5.5	8
M3AA 160MLC 8	7.5	8
M3AA 180MLA 8	11.0	8
M3AA 200MLA 8	15.0	8
M3AA 225MLA 8	18.5	8
M3AA 225MLB 8	22.0	8
M3AA 250SMA 8	30.0	8
M3AA 280SMA 8	37.0	8

1.1.3 - M3AA PP IE3:

Type designation	Output	Pole
M3AA 80MB2	0.75	2
M3AA 80MC2	1.1	2
M3AA 90L2	1.5	2
M3AA 90LB2	2.2	2
M3AA 100LB2	3	2
M3AA 112MB 2	4.0	2
M3AA 132SB 2	5.5	2
M3AA 132SC 2	7.5	2
M3AA 160MLA 2	11.0	2
M3AA 160MLB 2	15.0	2
M3AA 160MLC 2	18.5	2
M3AA 160MLD 2	22.0	2
M3AA 180MLA 2	22.0	2
M3AA 180MLA 2	22.0	2
M3AA 180MLC 2	37.0	2
M3AA 200MLA 2	30.0	2
M3AA 200MLA 2	30.0	2
M3AA 200MLB 2	37.0	2
M3AA 200MLB 2	37.0	2
M3AA 200MLC 2	45.0	2
M3AA 225SMA 2	45.0	2
M3AA 225SMA 2	45.0	2
M3AA 225SMB 2	55.0	2
M3AA 225SMC 2	75.0	2
M3AA 250SMA 2	55.0	2
M3AA 250SMA 2	55.0	2
M3AA 250SMB 2	75.0	2
M3AA 250SMC 2	90.0	2
M3AA 280SMA 2	75.0	2
M3AA 280SMA 2	75.0	2
M3AA 280SMB 2	90.0	2
M3AA 280SMB 2	90.0	2
M3AA 80 ME4	0.75	4

M3AA 90LB4	1.1	4
M3AA 90LD4	1.5	4
M3AA 100LC4	2.2	4
M3AA 100LD4	3	4
M3AA 112MB 4	4.0	4
M3AA 132M 4	5.5	4
M3AA 132MA 4	7.5	4
M3AA 180MLA 4	18.5	4
M3AA 180MLA 4	18.5	4
M3AA 180MLB 4	22.0	4
M3AA 200MLA 4	30.0	4
M3AA 200MLB 4	37.0	4
M3AA 225SMA 4	37.0	4
M3AA 225SMB 4	45.0	4
M3AA 250SMA 4	55.0	4
M3AA 250SMA 4	55.0	4
M3AA 250SMB 4	75.0	4
M3AA 280SMA 4	75.0	4
M3AA 90LB6	0.75	6
M3AA 90LD6	1.1	6
M3AA 100LC6	1.5	6
M3AA 112MB 6	2.2	6
M3AA 132MA 6	4.0	6
M3AA 132MC 6	5.5	6
M3AA 132S 6	3.0	6
M3AA 160MLA 6	7.5	6
M3AA 160MLB 6	11.0	6
M3AA 180MLA 6	15.0	6
M3AA 180MLB 6	18.5	6
M3AA 200MLA 6	18.5	6
M3AA 200MLA 6	18.5	6
M3AA 200MLB 6	22.0	6
M3AA 225SMA 6	30.0	6
M3AA 250SMA 6	37.0	6
M3AA 250SMA 6	37.0	6
M3AA 250SMB 6	45.0	6
M3AA 250SMC 6	55.0	6
M3AA 280SMA 6	45.0	6
M3AA 280SMA 6	45.0	6
M3AA 280SMB 6	55.0	6
M3AA 280SMB 6	55.0	6

2. DOCUMENTS AND DRAWINGS :

Low voltage process performance motors specification ref. 9AKK105944 dated Mar.2016.
Low voltage general performance motors specification ref. 9AKK105789 dated Jun.2016.
Marine motors catalog 9AKK106166 dated Oct.2016.

3. TEST REPORTS :

3.1 - M2AA tests reports:

M2AA63A2_D_3GAA061001_E	M2AA63A2_S_3GAA061001_E
M2AA63A2_D_3GAA061002_E	M2AA63A2_S_3GAA061002_E
M2AA71A2_D_3GAA071001_E	M2AA71A2_S_3GAA071001_E
M2AA71B2_D_3GAA071002_E	M2AA71B2_S_3GAA071002_E
M2AA080B2_D_3GAA081212_E	M2AA080B2_S_3GAA081212_E
M2AA080C2_D_3GAA081213_E	M2AA080C2_S_3GAA081213_E
M2AA90L2_D_3GAA091212_E	M2AA90L2_S_3GAA091212_E
M2AA90LB2_D_3GAA091213_E	M2AA90LB2_S_3GAA091213_E
M2AA100LB2_D_3GAA101212_E	M2AA100LB2_S_3GAA101212_E
M2AA112MB2_D_3GAA111212_E	M2AA112MB2_S_3GAA111212_E
M2AA132SB2_D_3GAA131212_E	M2AA132SB2_S_3GAA131212_E
M2AA132SC2_D_3GAA131213_E	M2AA132SC2_S_3GAA131213_E
M2AA160MLA2_D_3GAA161410_F	-
M2AA160MLB2_D_3GAA161420_F	-

M2AA160MLC2_D_3GAA161430_F	-
M2AA180MLA2_D_3GAA181410_F	-
M2AA200MLA2_D_3GAA201410_F	-
M2AA200MLB2_D_3GAA201420_F	-
M2AA225SMA2_D_3GAA221210_F	-
M2AA250SMA2_D_3GAA251210_F	-
M2AA63A4_D_3GAA062001_E	M2AA63A4_S_3GAA062001_E
M2AA63A4_D_3GAA062002_E	M2AA63A4_S_3GAA062002_E
M2AA71A4_D_3GAA072001_E	M2AA71A4_S_3GAA072001_E
M2AA71B4_D_3GAA072002_E	M2AA71B4_S_3GAA072002_E
M2AA080A4_D_3GAA082001_E	M2AA080A4_S_3GAA082001_E
M2AA080D4_D_3GAA082214_E	M2AA080D4_S_3GAA082214_E
M2AA90LB4_D_3GAA092214_E	M2AA90LB4_S_3GAA092214_E
M2AA90LD4_D_3GAA092215_E	-
M2AA100LC4_D_3GAA102213_E	M2AA100LC4_S_3GAA102213_E
M2AA100LD4_D_3GAA102214_E	M2AA100LD4_S_3GAA102214_E
M2AA112MB4_D_3GAA112212_E	M2AA112MB4_S_3GAA112212_E
M2AA132M4_D_3GAA132212_E	M2AA132M4_S_3GAA132212_E
M2AA132MA4_D_3GAA132214_E	M2AA132MA4_S_3GAA132214_E
M2AA160MLA4_D_3GAA162410_F	-
M2AA160MLB4_D_3GAA162420_F	-
M2AA180MLA4_D_3GAA182410_F	-
M2AA180MLB4_D_3GAA182420_F	-
M2AA200MLA4_D_3GAA202410_F	-
M2AA225SMA4_D_3GAA222210_F	-
M2AA225SMB4_D_3GAA222220_F	-
M2AA250SMA4_D_3GAA252210_F	-
M2AA63A4_D_3GAA063001_E	M2AA63A4_S_3GAA063001_E
M2AA63A4_D_3GAA063002_E	M2AA63A4_S_3GAA063002_E
M2AA71A6_D_3GAA073001_E	M2AA71A6_S_3GAA073001_E
M2AA71B6_D_3GAA073002_E	M2AA71B6_S_3GAA073002_E
M2AA080A6_D_3GAA083001_E	M2AA080A6_S_3GAA083001_E
M2AA080B6_D_3GAA083002_E	M2AA080B6_S_3GAA083002_E
M2AA90LB6_D_3GAA093213_E	M2AA90LB6_S_3GAA093213_E
M2AA90LD6_D_3GAA093214_E	M2AA90LD6_S_3GAA093214_E
M2AA100LC6_D_3GAA103212_E	M2AA100LC6_S_3GAA103212_E
M2AA112MB6_D_3GAA113212_E	M2AA112MB6_S_3GAA113212_E
M2AA132S6_D_3GAA133211_E	M2AA132S6_S_3GAA133211_E
M2AA132MA6_D_3GAA133212_E	M2AA132MA6_S_3GAA133212_E
M2AA132MB6_D_3GAA133213_E	M2AA132MB6_S_3GAA133213_E
M2AA132MC6_D_3GAA133214_E	M2AA132MC6_S_3GAA133214_E
M2AA160MLA6_D_3GAA163410_F	-
M2AA160MLB6_D_3GAA163420_F	-
M2AA180MLA6_D_3GAA183410_F	-
M2AA200MLA6_D_3GAA203410_F	-
M2AA200MLB6_D_3GAA203420_F	-
M2AA225SMA6_D_3GAA223210_F	-
M2AA250SMA6_D_3GAA253210_F	-

3.2 - <u>M3AA IE2 tests reports:</u>

M3AA63A2_D_3GAA061311_E	M3AA63A2_S_3GAA061311_E
M3AA63B2_D_3GAA061312_E	M3AA63B2_S_3GAA061312_E
M3AA71A2_D_3GAA071311_E	M3AA71A2_S_3GAA071311_E
M3AA71B2_D_3GAA071312_E	M3AA71B2_S_3GAA071312_E
M3AA080B2_D_3GAA081312_E	M3AA080B2_S_3GAA081312_E
M3AA080C2_D_3GAA081313_E	M3AA080C2_S_3GAA081313_E
M3AA90L2_D_3GAA091500_E	M3AA90L2_S_3GAA091500_E
M3AA90LB2_D_3GAA091520_E	M3AA90LB2_S_3GAA091520_E
M3AA100LB2_D_3GAA101520_E	M3AA100LB2_S_3GAA101520_E
M3AA112MB2_D_3GAA111320_E	M3AA112MB2_S_3GAA111320_E
M3AA132SB2_D_3GAA131120_E	M3AA132SB2_S_3GAA131120_E
M3AA132SC2_D_3GAA131130_E	M3AA132SC2_S_3GAA131130_E

M3AA132SMG2HO_D_3GAA131270_E	M3AA132SMG2HO_S_3GAA131270_E
M3AA132SMJ2HO_D_3GAA131290_E	M3AA132SMJ2HO_S_3GAA131290_E
M3AA160MLA2_D_3GAA161410_G	-
M3AA160MLB2_D_3GAA161420_G	-
M3AA160MLC2_D_3GAA161430_G	-
M3AA160MLD2_D_3GAA161440_G	-
M3AA160MLE2_D_3GAA161450_G	-
M3AA180MLA2_D_3GAA181410_G	-
M3AA200MLA2_D_3GAA201410_G	-
M3AA200MLB2_D_3GAA201420_G	-
M3AA200MLC2_D_3GAA201430_G	-
M3AA200MLD2_D_3GAA201440_G	-
M3AA225SMA2_D_3GAA221210_G	-
M3AA225SMB2_D_3GAA221220_G	-
M3AA225SMC2_D_3GAA221230_G	-
M3AA225SMD2_D_3GAA221240_G	-
M3AA250SMA2_D_3GAA251210_G	-
M3AA250SMB2_D_3GAA251220_G	-
M3AA250SMC2_D_3GAA251230_G	-
M3AA280SMA2_D_3GAA281210_G	-
M3AA280SMB2_D_3GAA281220_G	-
M3AA63A4_D_3GAA062311_E	M3AA63A4_S_3GAA062311_E
M3AA63B4_D_3GAA062312_E	M3AA63B4_S_3GAA062312_E
M3AA71A4_D_3GAA072311_E	M3AA71A4_S_3GAA072311_E
M3AA71B4_D_3GAA072312_E	M3AA71B4_S_3GAA072312_E
M3AA080A4_D_3GAA082311_E	M3AA080A4_S_3GAA082311_E
M3AA080D4_D_3GAA082314_E	M3AA080D4_S_3GAA082314_E
M3AA090LB4_D_3GAA092520_E	M3AA090LB4_S_3GAA092520_E
M3AA090LD4_D_3GAA092540_E	M3AA090LD4_S_3GAA092540_E
M3AA100LC4_D_3GAA102530_E	M3AA100LC4_S_3GAA102530_E
M3AA100LD4_D_3GAA102540_E	M3AA100LD4_S_3GAA102540_E
M3AA112MB4_D_3GAA112320_E	M3AA112MB4_S_3GAA112320_E
M3AA132M4_D_3GAA132300_E	M3AA132M4_S_3GAA132300_E
M3AA132MA4_D_3GAA132310_E	M3AA132MA4_S_3GAA132310_E
M3AA132SMF4_D_3GAA132260_E	-
M3AA132SMF4HO_D_3GAA132260_E	M3AA132SMF4HO_S_3GAA132260_E
M3AA132SMH4HO_D_3GAA132280_E	M3AA132SMH4HO_S_3GAA132280_E
M3AA160MLA4_D_3GAA162410_G	-
M3AA160MLB4_D_3GAA162420_G	-
M3AA160MLC4_D_3GAA162430_G	-
M3AA160MLD4_D_3GAA162440_G	-
M3AA180MLA4_D_3GAA182410_G	-
M3AA180MLB4_D_3GAA182420_G	-
M3AA180MLC4_D_3GAA182430_G	-
M3AA200MLA4_D_3GAA202410_G	-
M3AA200MLB4_D_3GAA202420_G	-
M3AA200MLC4_D_3GAA202430_G	-
M3AA225SMA4_D_3GAA222210_G	-
M3AA225SMB4_D_3GAA222220_G	-
M3AA225SMD4_D_3GAA222240_G	-
M3AA250SMA4_D_3GAA252210_G	-
M3AA250SMB4_D_3GAA252220_G	-
M3AA250SMC4_D_3GAA252230_G	-
M3AA280SMA4_D_3GAA282210_G	-
M3AA280SMB4_D_3GAA282220_G	-
M3AA63A6_D_3GAA063311_E	M3AA63A6_S_3GAA063311_E
M3AA63A6_D_3GAA063312_E	M3AA63A6_S_3GAA063312_E
M3AA71A6_D_3GAA073311_E	M3AA71A6_S_3GAA073311_E
M3AA71B6_D_3GAA073312_E	M3AA71B6_S_3GAA073312_E
M3AA080A6_D_3GAA083311_E	M3AA080A6_S_3GAA083311_E

M3AA080B6_D_3GAA083312_E	M3AA080B6_S_3GAA083312_E
M3AA090LB6_D_3GAA093520_E	M3AA090LB6_S_3GAA093520_E
M3AA090LD6_D_3GAA093540_E	M3AA090LD6_S_3GAA093540_E
M3AA100LC6_D_3GAA103530_E	M3AA100LC6_S_3GAA103530_E
M3AA112MB6_D_3GAA113320_E	M3AA112MB6_S_3GAA113320_E
M3AA132MB6_D_3GAA133320_E	M3AA132MB6_S_3GAA133320_E
M3AA132MC6_D_3GAA133330_E	M3AA132MC6_S_3GAA133330_E
M3AA132S6_D_3GAA133100_E	M3AA132S6_S_3GAA133100_E
M3AA160MLA6_D_3GAA163410_G	-
M3AA160MLB6_D_3GAA163420_G	-
M3AA160MLC6_D_3GAA163430_G	-
M3AA180MLA6_D_3GAA183410_G	-
M3AA200MLA6_D_3GAA203410_G	-
M3AA200MLB6_D_3GAA203420_G	-
M3AA200MLC6_D_3GAA203430_G	--
M3AA225SMA6_D_3GAA223210_G	-
M3AA225SMB6_D_3GAA223220_G	-
M3AA225SMC6_D_3GAA223230_G	-
M3AA250SMA6_D_3GAA253210_G	-
M3AA250SMB6_D_3GAA253220_G	-
M3AA250SMC6_D_3GAA253230_G	-
M3AA280SMA6_D_3GAA283210_G	-
M3AA280SMB6_D_3GAA283220_G	-
M3AA71A8_D_3GAA074001_E	M3AA71A8_S_3GAA074001_E
M3AA71B8_D_3GAA074002_E	M3AA71B8_S_3GAA074002_E
M3AA080A8_D_3GAA084001_E	M3AA080A8_S_3GAA084001_E
M3AA080B8_D_3GAA084002_E	M3AA080B8_S_3GAA084002_E
M3AA090S8_D_3GAA094100_E	M3AA090S8_S_3GAA094100_E
M3AA090L8_D_3GAA094500_E	M3AA090L8_S_3GAA094500_E
M3AA100LA8_D_3GAA104510_E	M3AA100LA8_S_3GAA104510_E
M3AA100LB8_D_3GAA104520_E	M3AA100LB8_S_3GAA104520_E
M3AA112M8_D_3GAA114300_E	M3AA112M8_S_3GAA114300_E
M3AA132M8_D_3GAA134300_E	M3AA132M8_S_3GAA134300_E
M3AA132MF8HO_D_3GAA134360_E	M3AA132MF8HO_S_3GAA134360_E
M3AA132S8_D_3GAA134100_E	M3AA132S8_S_3GAA134100_E
M3AA160MLA8_D_3GAA164410_G	-
M3AA160MLB8_D_3GAA164420_G	-
M3AA160MLC8_D_3GAA164430_G	-
M3AA180MLA8_D_3GAA184410_G	-
M3AA200MLA8_D_3GAA204410_G	-
M3AA225MLA8_D_3GAA224210_G	-
M3AA225MLB8_D_3GAA224220_G	-
M3AA250SMA8_D_3GAA254210_G	-
M3AA280SMA8_D_3GAA284031_G	-

3.3 - <u>M3AA IE3 tests reports:</u>

M3AA80MB2_S_3GAA081612-J	-
M3AA80MC2_S_3GAA081613-J	-
M3AA90L2_S_3GAA091500_J	-
M3AA90LB2_S_3GAA091520_J	-
M3AA100LB2_S_3GAA101520_J	-
-	M3AA112MB2_D_3GAA111320_J
-	M3AA132SB2_D_3GAA131120_J
-	M3AA132SC2_D_3GAA131130_J
-	M3AA160MLA2_D_3GAA161410_K
-	M3AA160MLB2_D_3GAA161420_K
-	M3AA160MLC2_D_3GAA161430_K
-	M3AA160MLD2_D_3GAA161440_K
-	M3AA180MLA2_D_3GAA181410_K
-	M3AA180MLA2_D_3GAA181410_L

-	M3AA180MLC2_D_3GAA181430_K
-	M3AA200MLA2_D_3GAA201410_K
-	M3AA200MLA2_D_3GAA201410_L
-	M3AA200MLB2_D_3GAA201420_K
-	M3AA200MLB2_D_3GAA201420_L
-	M3AA200MLC2_D_3GAA201430_K
-	M3AA225SMA2_D_3GAA221210_K
-	M3AA225SMA2_D_3GAA221210_L
-	M3AA225SMB2_D_3GAA221220_K
-	M3AA225SMC2_D_3GAA221230_K
-	M3AA250SMA2_D_3GAA251210_K
-	M3AA250SMA2_D_3GAA251210_L
-	M3AA250SMB2_D_3GAA251220_K
-	M3AA250SMC2_D_3GAA251230_K
-	M3AA280SMA2_D_3GAA281210_L
-	M3AA280SMA2_D_3GAA281210_K
-	M3AA280SMB2_D_3GAA281220_K
-	M3AA280SMB2_D_3GAA281220_L
M3AA80ME4_S_3GAA082614-J	-
M3AA090LB4_S_3GAA092520_J	-
M3AA090LD4_S_3GAA092540_J	-
M3AA100LC4_S_3GAA102530_J	-
M3AA100LD4_S_3GAA102540_J	-
-	M3AA112MB4_D_3GAA112320_J
-	M3AA132M4_D_3GAA132300_J
-	M3AA132MA4_D_3GAA132310_J
-	M3AA180MLA4_D_3GAA182410_K
-	M3AA180MLA4_D_3GAA182410_L
-	M3AA180MLB4_D_3GAA182420_K
-	M3AA200MLA4_D_3GAA202410_K
-	M3AA200MLB4_D_3GAA202420_K
-	M3AA225SMA4_D_3GAA222210_K
-	M3AA225SMB4_D_3GAA222220_K
-	M3AA250SMA4_D_3GAA252210_K
-	M3AA250SMA4_D_3GAA252210_L
-	M3AA250SMB4_D_3GAA252220_K
-	M3AA280SMA4_D_3GAA282210_L
M3AA090LB6_S_3GAA093520_J	-
M3AA090LD6_S_3GAA093540_J	-
M3AA100LC6_S_3GAA103530_J	-
M3AA112MB6_S_3GAA113320_J	-
-	M3AA132MA6_D_3GAA133310_J
-	M3AA132MC6_D_3GAA133330_J
-	M3AA132S6_D_3GAA133100_J
-	M3AA160MLA6_D_3GAA163410_K
-	M3AA160MLB6_D_3GAA163420_K
-	M3AA180MLA6_D_3GAA183410_K
-	M3AA180MLB6_D_3GAA183420_K
-	M3AA200MLA6_D_3GAA203410_K
-	M3AA200MLA6_D_3GAA203410_L
-	M3AA200MLB6_D_3GAA203420_K
-	M3AA225SMA6_D_3GAA223210_K
-	M3AA250SMA6_D_3GAA253210_K
-	M3AA250SMA6_D_3GAA253210_L
-	M3AA250SMB6_D_3GAA253220_K
-	M3AA250SMC6_D_3GAA253230_K
-	M3AA280SMA6_D_3GAA283210_K
-	M3AA280SMA6_D_3GAA283210_L
-	M3AA280SMB6_D_3GAA283220_K
-	M3AA280SMB6_D_3GAA283220_L

4. APPLICATION / LIMITATION :

4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships

4.2 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above motors are to be supplied by **ABB Sp. z.o.o** 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 and as such does not require a BV product certificate.

5.3 - **ABB Sp. z.o.o** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - **ABB Sp. z.o.o.** has declared to Bureau Veritas the following production site(s):

ABB Oy Motors and Generators
Strömbergin puistotie 5
FI-65320 Vaasa
FINLAND

ABB Shanghai Motors Co. Ltd.
88, Tianning Road,
Minhang Econ & Tech Dev. Zone,
Shanghai
200245 Shanghai
CHINA

ABB sp. z o.o.
ul. Placydowska 27
95-070 Aleksandrow Lodzki
POLAND

6. MARKING OF PRODUCT :

6.1 - Trade name.

6.2 - Date of manufacture and serial number.

6.3 - Equipment type or model identification under which it was type-tested

6.4 - Plate marking in accordance with IEC 60034 series.

7. OTHERS :

It is **ABB Sp. z.o.o** 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.

***** END OF CERTIFICATE *****