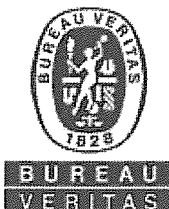


MARINE DIVISION

17 bis Place des Reflets - La Défense 2
92400 Courbevoie - France

Tel. 33 1 42 91 52 91
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www.veristar.com



Certificate number: 04428/J0 BV

File number : ACE 04/002/01

Product code : 2584I

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

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

ABB AB, LV Motors
Västerås - SWEDEN

for the type of product

ASYNCHRONOUS MACHINES

Marine Aluminium Motors type M2AA and M3AA.

Regulations and standards :

BV Rules for the Classification of Steel Ships.
IEC 60034 series, 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 of the Regulations and standards mentioned above.

This certificate is valid until : 27 Dec 2012

At Paris la Défense, on : 27 Dec 2007

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV GOTHENBURG
Surveyor : M. Moller

L.COURREGELONGUE



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 Division. 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 :

Marine Aluminium Motors

Totally enclosed squirrel cage three phase low voltage motors.

Type: **M2AA 112 to M2AA 250 and M3AA 112 to M3AA 280.**

Rated voltage: 220 to 690 V

Rated frequency: 50 Hz and 60 Hz

Synchronous speed: 750 to 3600 RPM

Number of poles: 2 to 8 and combination

Duty type S1, S2-30 mn, S6-25%, S6-40%, S6 - 60%.

Insulation class: F

Temperature rise class F

Ambient temperature: 45°C

Degree of protection: IP 55 - IP 56.

Rated power at S1 duty as shown on the ABB. LV Motors / Cat. BU / Marine Motors / Aluminium EN 12.2006.

2. DOCUMENTS AND DRAWINGS :

According to documents filed in ACE 04/002/01, including drawings, description and technical data.

ABB, LV Motors / Cat. BU / Marine Motors / Aluminium EN 12.2006.

3. TEST REPORTS :

The type tests have been carried out in the laboratory of the manufacturer according to BV Rules Pt C, Ch 2, Sec 4, table 5.

Type test reports reference to renewed the certificate:

Test N° 361933 - 428109-4 - 428128-4 - 428138-4 - 15294656-1.

43187 STH - 43199 STH - 43186 STH - 43193 STH - 43188 STH - 43190 STH - 44211 STH - 44200 STH.

4. APPLICATION / LIMITATION :

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

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The Marine Aluminium Motors described above are to be manufactured, examined and tested by **ABB AB, LV Motors, SE-721 70 Vasteras - Sweden** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

5.3 - **ABB AB, LV Motors, S E-721 70 Vasteras - Sweden** has declared to Bureau Veritas that the Marine Aluminium Motors described in this certificate are manufactured at the following site:

**ABB AB, LV Motors
SE-721 70 - VASTERAS
SWEDEN**

6. MARKING OF PRODUCT :

Name plate according to IEC 60034-1.

Society's brand according to BV Mode Survey .

7. OTHERS :

7.1 - 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 the **ABB AB, LV Motors, SE-721 70 Vasteras - Sweden** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 04428/I1 BV issued on 05.06.2002 by the Society.

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