



MARINE DIVISION

Certificate number: 11801/B2 BV

File number: ACE 04/004/06 &amp; 07

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*

**ABB Oy, Motors**  
VAASA - FINLAND

*for the type of product*

### ASYNCHRONOUS MACHINES

Marine Motors with cast iron frame, type M3BP.

**Requirements:**

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 mentioned above.*

**This certificate will expire on: 28 Aug 2012**

For BUREAU VERITAS,

At BV HELSINKI, on 09 Mar 2010,

Tommy Andersson



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 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 :

3 phase cage Induction MARINE motors

Cast iron frame

Type: **M3BP 160 to M3BP 450**

Rated voltage: 220 to 690 V

Rated frequency: 50 Hz and 60 Hz

Synchronous speed: 500 to 3600 RPM

Number of poles: 2 to 12

Duty type: S1, S2 .... S9 according to IEC standard

Insulation class: F or H

Temperature rise: Class B, or F

Ambient temperature: 45°C

Degree of protection: IP 55 and IP 56

Rated power with S1 and class F temperature rise (90K).

Frame number	Power 2P/60 Hz	Power 2P/50 Hz	Power 4P/60 Hz	Power 4P/50 Hz	Power 6P/60 Hz	Power 6P/50 Hz	Power 8P/60 Hz	Power 8P/50 Hz
160 MA	14,5	11					5,2	4
160 M	17,5	15	15,5	11	9,8	7,5	6,4	5,5
160 L	21	18,5	18	15	13	11	8,6	7,5
180 M	26,5	22	22	18,5				
180 L			26	22	17,5	15	13,5	11
200 MLA	35	30			22	18,5	18	15
200 MLB	43	37	38	30	26	22		
225 SMA			44	37			21	18,5
225 SMB	54	45	55	45	35	30	25	22
250 SMA	65	55	65	55	43	37	34	30
280 SMA	90	75	88	75	55	45	43	37
280 SMB	105	90	105	90	63	55	55	45
315 SMA	125	110	125	110	86	75	63	55
315 SMB	155	132	150	132	105	90	85	75
315 SMC	185	160	185	160	125	110	105	90
315 MLA	230	200	230	200	150	132	125	110
355 SMA	290	250	288	250	195	160	155	132
355 SMB	362	315	362	315	230	200	185	160
355 SMC	410	355	400	355	300	250	230	200
355 MLA	450	400	450	400				
355 MLB	510	450	500	450	360	315	285	250
355 LKA		500	575	500	400	355		
355 LKB		560	620	560	440	400	330	300
400 LA	630	560	630	560	450	400	360	315
400 LKA	630	560	630	560	450	400	360	315
400 LB	710	630	710	630	510	450	400	355
400LKB	710	630	710	630	510	450	400	355
400 LC	780	710	780	710	560	500	450	400
400 LKC	780	710	780	710	560	500	450	400
400 LD					630	560		
400 LKD					630	560		
450 LA	900	800	900	800	710	630	500	450
450 LB	1000	900	1000	900	800	710	560	500
450 LC			1100	1000	900	800	630	560
450 LD							710	630

### 2. DOCUMENTS AND DRAWINGS :

According to documents filed in ACE 04/004/06 & 07, including drawings, description and technical data  
ABB LV Motors / Cat. BU / Marine Motors / Cast iron EN 12-2006.

**3. TEST REPORTS :****Electrical tests**

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 of:

M3BP 280SMC 4 400VD 50 Hz 110 kW, M3BP 280SMC 4 440VD 60 Hz 125 kW, M3BP 280SMB 2 400VD 50 Hz 90 kW, M3BP 280SMB 2 440VD 60 Hz 105 kW, M3BP 315SMC 4 400VD 50 Hz 160 kW, M3BP 315SMC 4 440VD 60 Hz 185 kW, M3BP 315MLA 2 400VD 50 Hz 200 kW, M3BP 315MLA 2 440VD 60 Hz 230 kW, M3BP 315SMA 2, M3BP 355MLA 2, M3BP 355SMA 2, M3BP 355LKB 2, M3BP 400LKB 2, M3BP 355SMA 4, M3BP 355MLA 4, M3BP 355LKA 4, M3BP 355SMA 6, M3BP 355MLB 6, M3BP 400LC 6, M3BP 400LKD 6, M3BP 355SMA 8, M3BP 400LC 8, M3BP 450LC 4 B3 100 KW/50 Hz, M3BP 355SMC 2 B3, M3BP 315SMC 6 V1.

**4. APPLICATION / LIMITATION :**

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

**5. PRODUCTION SURVEY REQUIREMENTS**

5.1 - The asynchronous motors Type: **M3BP 160 to M3BP 450** are to be manufactured, examined and tested by **ABB Oy, MOTORS, VAASA - FINLAND** 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 Oy, MOTORS** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following addresses:

**ABB Oy, MOTORS**  
**Strömbergin Puistotie 5 A**  
**FIN-65320 Vaasa**  
**FINLAND**

And

**ABB Shanghai Motors Co., Ltd**  
**88, Tianning Road**  
**Minhang Economic and Technological Development Zone**  
**Shanghai**  
**P.R China**

**6. MARKING OF PRODUCT :**

- Name plate according to IEC 60034-1.
- Stamp @ on frame when BV mode I survey.
- Stamp \ on frame when individually certified by the society

**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 OY, MOTORS, VAASA - FINLAND** 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° 11801/B1 BV issued on 09/07/2009 by the Society.

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