

MARINE DIVISION

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Certificate number: 20445/A1 BV

File number : ACE 04/004/10

Product code : 2584I

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

TYPE APPROVAL CERTIFICATE

This certificate is issued to

ABB Oy, Motors
VAASA - FINLAND

for the type of product

ASYNCHRONOUS MACHINES

Low Voltage Water Cooled Motors Type M3LP

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 : 07 Oct 2013

At Neuilly, on : 09 Dec 2008

For **BUREAU VERITAS**,
By order of the Secretary

L. COURREGELONGUE

Approval office



Local office : BV HELSINKI
Surveyor : T. 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. 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 :

Type designation: M3LP
 Low voltage water cooled motors
 3-phase squirrel cage, IEC frame 355-400-450
 Frame in steel with drain holes - bearing housing and terminal box in cast iron
 Rated voltage: 220 - 690 V
 Rated frequency: 50 Hz - 60 Hz
 Number of poles: 4, 6 and 8
 Synchronous speed: 750 - 1800 RPM
 Duty type: S1 - S9
 Enclosure class: IP 55, 56, 65 & 66
 Insulation class: F & H
 Ambient water temperature: 45°C

Rated power at 50 Hz 380 - 400 - 415 V Insulation class F, temperature rise class B.

Motor Type	Output kW 4 Poles	Output kW 6 Poles	Output kW 8 Poles
M3LP 355 MLA	315	250	160
M3LP 355 MLB	355	315	200
M3LP 355 MLC	400	355	250
M3LP 355 MLD	450	400	/
M3LP 355 MLE	500	/	/
M3LP 355 LKA	560	450	315
M3LP 355 LKB	630	500	355
M3LP 400 LA	710	560	400
M3LP 400 LB	780	630	450
M3LP 400 LC	850	710	500
M3LP 400 LD	/	800	/
M3LP 450 LA	1000	850	560
M3LP 450 LB	1100	/	630

Rated power at 60 Hz 440 V Insulation class F, temperature rise class B.

Motor Type	Output kW 4 Poles	Output kW 6 Poles	Output kW 8 Poles
M3LP 355 MLA	362	280	185
M3LP 355 MLB	400	350	230
M3LP 355 MLC	450	400	285
M3LP 355 MLD	500	450	/
M3LP 355 MLE	560	/	/
M3LP 355 LKA	630	500	362
M3LP 355 LKB	710	560	400
M3LP 400 LA	800	630	450
M3LP 400 LB	880	710	500
M3LP 400 LC	950	800	560
M3LP 400 LD	/	900	/
M3LP 450 LA	1100	950	630
M3LP 450 LB	1220	1020	710
M3LP 450 LC	1350	1150	800
M3LP 450 LD	/	/	900

2. DOCUMENTS AND DRAWINGS :

ABB LV Motors catalogue ref M3LP EN 02-2008.
Drawings and documentation enclosed to ABB Document list dated 2008-05-26.

3. TEST REPORTS :

Type Test Report for M3LP 355 LKA 4
Type Test Report for M3LP 355 LKB 6
Type Test Report for M3LP 400 LA 6
Type Test Report for M3LP 400 LB 4
Type Test Report for M3LP 400 LC 4
Type Test Report for M3LP 400 LD 6
Type Test Report for M3LP 450 LA 4
Impact resistance and IP protection of motor terminal box type M3GP/HP/KP355-400: Test Report N° 9 AFX02-242.
Degree of protection provided by motors M3BP/GP/HP 280...400(V-ring sealing): Test Report N° 9 AFX02-028 rev.1.
Degree of protection provided by a motor sealing type M3BP/GP/HP/JP/KP 280...400: Test Report N° 9 AFX02-213.

4. APPLICATION / LIMITATION / ON BOARD INSTALLATION & MAINTENANCE REQUIREMENTS :

- 4.1 - According to BV Rules for the Classification of Steel Ships and IEC 60092 series.
- 4.2 - For installation in non hazardous area.
- 4.3 - Motors must be fitted with a leakage detector.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The low voltage water cooled motors type M3LP 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, Vaasa - Finland** has declared to BUREAU VERITAS that the motors described in this certificate are manufactured at the following site:

**ABB OY, Motors
Strombergin Puistotie 5A, FI-65101 VAASA
FINLAND**

6. MARKING OF PRODUCT :

- Electrical characteristics according to IEC 60034.1
- Ⓐ or Ⓑ 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 **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° 20445/A0 BV issued on 07/10/2008 by the Society.

*** END OF CERTIFICATE ***